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Managerial Challenges Due to Diversity in Technical Teams

A Qualitative Study

by

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Abstract

The positive effects of diversity have been comprehensively highlighted in the academic world. However, less research has been conducted on the challenges that can occur due to diversity. Even less research has been conducted on challenges due to diversity in technical teams. In an effort to augment the positive effects of diversity, this study aims to shed light on some of the challenges due to diversity, in order for managers to be better able to understand and manage them. There are various dimensions within diversity, and no previous study seems to have exclusively studied challenges in technical teams due to diversity in functional and cultural background. Therefore, the purpose of this study was to investigate if cultural and functional background diversity can cause tensions that lead to conflicts in technical teams. The most common type of conflict was firstly determined; subsequently, the most common underlying cause was also determined. Lastly, the study provides managerial suggestions for preventing tensions and conflicts in technical teams from escalating.

This research is conducted as a case study with an abductive approach where data was collected from 13 semi-structured interviews and carefully analysed afterwards. The findings of the study revealed that tensions and conflicts can be caused by diversity in cultural and functional backgrounds in technical teams, where the most common type of conflicts was clarity in expectations, misunderstandings in expressions and language, misunderstandings due to functional background, language barrier, communication style, lack understanding of technical language, non-compatible working methods, and lack of shared and clear understanding of methods. The findings further showed three most recurring causes for tensions and conflicts: misunderstandings and mistrust, communication, and working methods. For the managerial suggestions for preventing tensions and conflicts from escalating, five themes were emphasised; Flexible management style, Understanding Behaviour & Cultural intelligence, Clear direction, clear authority and responsibilities, Prompt conflict handling and lastly, Building trust and shared understanding. The findings of the study thus demonstrated that diversity in the cultural and functional background in technical teams can cause tensions or conflicts in technical teams, and the most common type of conflict in this study was human-rooted conflict.

Keywords: Diversity, Functional Background, Cultural diversity, Tensions, Conflict

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1. Introduction

1.1 Background

In the current age of globalisation, digitalisation is changing the way we work with every passing day. More talent and people from different domains are required to achieve digital transformation (Davenport & Redman, 2020). Employees are increasingly collaborating on a global level due to rising digitalization which results in a diverse workforce (Buchanan, Kelley & Hatch, 2016). Consequently, organisations are becoming more diverse than ever because digitalization demands new sources of talent and changes the way we collaborate, promoting inclusiveness (Millhiser, 2020). Companies are now more aware of the benefits of diversity and stepping up their efforts to achieve a more diverse workforce. Extensive research has been done on the benefits of diversity. For instance, Hunt, Layton and Prince (2015) studied diversity's correlation with the financial performance of companies and suggested that companies with more gender diversity and racial/ethnic diversity are more likely to have financial returns above their national industry mean. They found that companies that have greater levels of diversity have better performance. Similarly, Rock and Grant (2016) concluded that diverse teams are simply smarter because they focus more on facts, process information carefully to make better decisions, and they are more innovative. With increasing globalisation, cross-cultural and multicultural diverse workforce is not only an important part of organisations in the west but also in multinational companies all around the world (Shen, Chanda, DNetto & Monga, 2009). Diversity also plays a significant role in improving the quality of decisions by management and helps in tackling organisational problems through more creative ideas and innovative solutions (Shen, Chanda, DNetto & Monga, 2009; Sammartino, Nicholas & O'Flynn, 2001; Phillips, 2014).

However, diversity means that people are different, and when different people come together to make a workforce there are many challenges associated with it. Even though organisations are striving to achieve diversity at all levels through dedicated diversity programmes, research suggests that change programmes have a high failure rate of 70% (Hunt, Layton & Prince, 2015).

One of the major challenges associated with a diverse workplace is to create an inclusive culture in the organisation where everyone feels satisfied and empowered which enables them to contribute to organisational development to their fullest (Syed & Tariq, 2017). Similarly, Wright and Drewery (2006) found that the level of socio-emotional cohesion is affected by the multiculturalism of members in teams due to different perceptions of conflicts as compared to culturally homogenous teams. Cultural diversity is more challenging in the functioning of teams because team members have to understand the value and importance of divergent perspectives in order to enhance the effectiveness of a team by acting in cohesion with each other (Syed & Tariq, 2017). Also pointed out by Jayanthi and Rajandran (2014), communication issues, perception issues and impact of diversity on decision making are prominent challenges associated with culturally diverse teams. Several other authors including Earley and Mosakowski (2004), Jehn, Northcraft and Neale (1999) and Pelled, Eisenhardt and Xin (1999) also studied conflicts in heterogeneous teams and how diversity and conflicts among team members affect team performance negatively.

Organisations are increasing the emphasis on managing workplace diversity in several ways (Scarborough, Lambouthis III & Holbrook, 2019; Anglim, Sojo, Ashford, Newman & Marty, 2019). The interest from organisations in managing diversity is not only to gain competitive advantage but also to drive innovation. Syed and Tariq (2017) suggest that organisations that develop and acknowledge different cultural values and the competence of efficient coordination across employees, valuing their cultural differences, are more likely to succeed. Managing diversity requires recognition of diversity as a positive factor and only when coupled with effective management of diversity can it ignite the capabilities of the diverse workforce for organisational success (Shen, Chanda, DNetto & Monga, 2009). Brett, Behfar and Kern (2006) also stressed that managers of teams with members from different cultures and backgrounds have a special responsibility to handle challenges associated due to diversity. Hence, it is crucial to study challenges in diverse teams in order to prepare organisations to manage diversity in an effective way such that it does not affect team performance.

1.2 Key Concepts

As discussed in the previous section, tensions and conflicts are part of diverse teams. These tensions can be of many forms and intensities, e.g. different opinions amongst team members can cause misunderstanding which can then lead to conflict amongst the members and affect team performance. Tension can be defined as “a state of latent hostility or opposition between individuals and groups” (Merriam-Webster, 2021), which was deemed suitable for this study. This definition exemplifies the difference between a tension and a conflict, where the tension is seen more as an underlying opposition that hasn’t evolved to an active disagreement. It is not necessary that any kind of tension among team members due to diversity will lead to conflict. Conflict has previously been defined as “an active disagreement between people with opposing opinions or principles” (Cambridge, 2021). This definition exemplifies that a conflict can be seen as an active disagreement between individuals. This study aims to investigate and explore these tensions and conflicts associated with diverse teams.

Technical teams have been chosen as the subject for this study, confining the scope of study only to teams that include engineers or people working in IT (e.g. Software developers, IT Consultants etc.) either working with people from other functional backgrounds or people from other countries.

A key term in this study is cultural diversity, meaning people from different nationalities. The term was derived from a previous definition of a multicultural team “Multicultural teams are defined as task-oriented groups consisting of people of different nationalities and cultures” (Matveev & Milter, 2004, p. 105). Covid-19 has made remote work a new possibility, which has implications for the contemporary way of working (PWC, 2021). Organisations now have a stronger possibility to source talent from anywhere in the world, as the offices no longer have to be based in certain countries. Therefore, the frequency of a wider variety of nationalities in organisations is prominent. Furthermore, leaders and managers operating in multinational companies compared to national leaders are likely to face far more managerial challenges due to diversity. A prominent challenge that has been correlated with managing diversity is the lack of knowledge about differences between countries, in social, legal and political factors (Syed & Tariq, 2017).

The second key term in this study is the functional background which was derived from the different key dimensions of diversity management mentioned by Syed and Tariq (2017). In this study, functional background diversity means team members from different subject areas according to their previous educational backgrounds. Technological projects that shape our modern technology require several different disciplines to collaborate. Software development especially is a process that needs to combine several different disciplines to function and a regular modern project composition requires over seven different roles where the roles span from engineers to user experience designers (Zhang & Pastel, 2015). The collaboration between these different functional backgrounds has produced solid applications (Zhang & Pastel, 2015). Moreover, the complexity of contemporary projects indicates that in the future there will be more domains collaborating on software projects (Basirati, Otasevic, Rajavi, Böhm & Krcmar, 2020). Scarlat, Zarzu and Prodan (2014) also mention this phenomenon and saw globalisation as a protagonist for more diverse teams in terms of education, especially in technical projects where innovation and creativity are needed. Furthermore, cross-boundary teaming has shown to enhance team effectiveness and increase innovation, but it can also be difficult in practice and not all teams become more innovative due to cross-boundary teaming (Edmondson & Harvey, 2018).

1.3 Research gap

After an extensive exploration of previous research, the literature suggests that limited research has been done to study the challenges associated with diversity in technical teams and thus this area remains unexplored. Digitalisation and technology are taking up a larger role in organisations and society. Technology is not only changing the way of doing business but new digital business models are being increasingly priorities emphasised (Hoe, 2020). Additionally, Frolova, Rogach and Ryabova (2020) describe how a new digital society is prominently demanding new competencies, moreover, students have also emphasized the need for technological competence. A key driver of the digitalisation of organisations and the digital society is the technical teams. Therefore, it appears interesting to combine diversity and technology, to explore the challenges that technical teams face due to diversity, and study to what extent diversity can be a cause of tensions or conflicts in technical teams. Previous research revealed that no study has been conducted on tensions or conflicts due to the two specific dimensions of diversity, i.e. cultural and functional background in technical teams. Therefore, this study will be a novel contribution to

research on diversity as it only focuses on two dimensions of diversity studied in specific types of teams i.e. technical teams.

As stated earlier, there are many dimensions associated with diversity. However, this research focuses only on two dimensions of diversity, i.e. 'Cultural' and 'Functional background'. Gender was not included as a dimension of diversity because of several reasons. Firstly, a lot of research has already been done on gender diversity. Secondly, given the time frame for this study, adding gender diversity can add more complexity and time required to complete the study, making it harder to find technical teams that fulfil the criteria of gender diversity as well.

1.4 Research Purpose

The purpose of this study is to investigate if cultural or functional background diversity in technical teams causes tensions that can lead to conflict. The study will further identify underlying causes behind these tensions that can create conflicts. Lastly, the study aims to provide an understanding of the challenges that these teams face to help managers to manage diversity more effectively.

1.5 Research questions

After identifying the research gap and purpose, we have formulated the following research questions:

1. What are the most common types of tensions and conflicts that occur in technical teams due to diversity in functional or cultural background?
2. What are the underlying causes behind tensions and conflicts that occur in technical teams due to diversity in functional or cultural background?
3. What are the effective ways of handling tensions and conflicts in functionally and culturally diverse technical teams?

1.6 Delimitations

Diversity in general includes many dimensions such as gender, race, ethnicity, religion, age etc. As pointed out earlier, this study focuses only on two dimensions of diversity i.e. cultural and functional background due to time constraints. Hence, the results of this study will be limited to

these two dimensions. Furthermore, the results of this study cannot be applied to any diverse team in general since this study is only focused on technical teams. There are other delimitations associated with the selection of participants that are explained in more detail in the method section (Chapter 3). Ideally, researchers aimed to interview managers and team members from the same teams but due to time constraints, which limited the efforts for finding participants, there was only one manager and team member interviewed from the same team. Hence, there were limitations associated with gaining manager and team members perspectives from the same team. Therefore, the results of this research might be dominated by the experiences of people working in these teams. Most of the participants selected for interviews belong to software development teams and all interviewees were working in the EU and Switzerland. This limits our study to mostly software development teams that work in the EU.

1.7 Outline of Thesis

This paper consists of six chapters. It starts with a background outlining general information on the rising significance of diversity in organisations along with benefits and challenges due to diversity in teams. The introduction also consists of a section on the research gap that contains descriptions of key terminologies in order to explain chosen dimensions of diversity. It is then followed by describing the research purpose and research questions. Subsequently, the second chapter establishes the theoretical framework used to identify categories and most common causes of conflicts through previous research leading to construction of hypotheses for this study. Chapter three explains the method applied for the research to systematically collect data, the design of the interview process, and the efforts to ensure reliability, validity and generalizability of this study. Furthermore, the data collected through the interviews are analysed and presented in chapter 4. This leads to chapter 5, presenting discussion of findings from collected data in relation to theoretical framework and recommendations. Lastly, the paper ends with a conclusion chapter that connects all the information by describing how this study successfully meets research aims and objectives, and summarises all aspects of this study to draw conclusions.

2. Theoretical framework

The theoretical framework is the backbone of this study, starting with a discussion of the terms diversity and diversity management. Following these two definitions is a review of different categories of conflict. The chapter then transitions to previously identified challenges due to diversity in the cultural and functional background in teams, and at the end of each cause, a hypothesis was formulated. Furthermore, the chapter concludes with a summary of the five different hypotheses that were formulated based on previously conducted research and a summary of the chapter.

2.1. Diversity and Diversity Management

According to Syed and Tariq (2017), diversity contains several factors and includes aspects of gender, ethnicity, religion, age, sexuality, and disability that differentiate individuals or groups (Syed & Tariq, 2017). Similarly, Yee, Miquel-Romero and Cruz-Ros (2020) have described workplace diversity with similar factors as Syed and Tariq (2017) excluding disability that differentiates individuals. Diversity can also refer to having employees with different educational or functional backgrounds, which has been defined as knowledge diversity (Edmondson & Harvey, 2018). Other authors have previously defined diversity in even broader terms as “...any attribute people use to tell themselves that another person is different.” (Williams & O’Reilly, 1998, p.81). The definition by Williams and O’Reilly (1998) is valid, however, in an attempt to conduct managerial research on diversity, the definition and description seems too broad. The descriptions by Syed and Tariq (2017) and Yee, Miquel-Romero and Cruz-Ros (2020) of diversity and workplace diversity are more usable by categorising diversity to study the different factors.

Diversity management has been described by Syed and Tariq (2017) as the possibility to create a productive environment by managing a workforce consisting of diverse people with both tangible and intangible differences such as age, sex, background, race, disability, personality and work style. Similarly, Green, López, Wysocki and Kepner (2002) describe how managing diversity is an exhaustive process that creates a workplace that includes all employees. Diversity management in practice can take many forms such as policies, training or mentorships (Scarborough,

Lambouths III & Holbrook, 2019; Janssens & Zanoni, 2014). Diversity management can also be conducted as programs for employees and managers, in order to manage biases (Dobbin & Kalev, 2016). However, as highlighted by Dobbin and Kalev (2016) these programs regularly fail. Previous research suggests that the practice of managing diversity is quite broad and complex. The definitions of managing diversity found in previous research are also vague, this sheds light on the complexity for managers to meaningfully manage diversity successfully. Indeed, fostering diversity in the workplace requires organizations to have a comprehensive contemporary understanding of social and economic factors (Anglim, Sojo, Ashford, Newman & Marty, 2019). However, the task might be complex and the differences significant, but if managers fail to manage diversity in the workplace it can lead to tensions or conflicts within the organization and affect team performance. Consequences like negative conflicts may arise when team members fail to overcome their differences (Toegel & Barsoux, 2016). Moreover, pure misunderstandings due to cultural differences have previously led to a breakdown in alliances (D'Iribarne, Chevrier, Henry, Geneviève & Treguer-Felten, 2020). Seeing that there can be several differences between different functional and cultural backgrounds, there is a risk for many different conflicts. Therefore, the following section 2.2 explores how previous research has meaningfully differentiated categories of conflict.

2.2. Human-rooted conflict and non-human rooted conflict

Previous research shed light on how there are different schools of thoughts about conflict in teams, and how the roots of conflicts can be of different categories. Basirati et al. (2020) conducted an empirical study on the relationship between conflict and success in software development projects. The terminology by Basirati et al. (2020) includes two types of conflict, human-rooted conflict (HRC) and non-human rooted conflict (NHRC). The human-rooted category is based on general interests or background and can include factors such as culture or contradictory personalities. The non-human-rooted category consists of conflict stemming from different methods of working and work processes (Basirati et al. 2020).

The findings in the study from Basirati et al. (2020) points to the fact that both HRC and NHRC conflicts affect software project success negatively, and that HRC conflicts are always dangerous for the success of the projects. Pelled, Eisenhardt and Xin (1999) suggest that task conflicts are

affecting team performance in a more positive way than emotional conflict. Task conflicts are conflicts such as goals or procedures and emotional conflicts are conflicts due to negative feelings such as anger. Jackson (1996) presents a similar taxonomy for diversity in two different categories, task related and relations-oriented attributes, where the relations-oriented attribute is the dimension that often gets neglected but still creates challenges. Some examples of relations oriented attributes are nationality, personality and ethnicity, and some examples of task-related attributes are education level, knowledge and expertise (Jackson, 1996).

Furthermore, Eisenhardt, Kahwajy and Bourgeois III (1997) advocated that not all conflicts are negative and technical top management teams can have healthy conflicts, as the members in these teams challenge each other and therefore develop a wider range of options to make better decisions. Eisenhardt, Kahwajy and Bourgeois III (1997) also argue that the key to having healthy conflicts is to minimize interpersonal conflict, strengthening the viewpoint of Pelled, Eisenhardt and Xin (1999) about emotional conflict.

The different types of conflict identified above are all relevant. There seems to be no consensus on the type of conflict that is constructive, which might be hard to determine even for the researchers of this study. Moreover, there seems to be no clear idea of how frequent the different conflicts are in the teams. However, the terminology of Basirati et al. (2020) was used in this study as it was not only the most recently conducted research but also covers the task and emotional conflict terminology described by Pelled, Eisenhardt and Xin (1999). Furthermore, the terminology by Basirati et al. (2020) also separates the human-rooted conflict and non-human rooted conflict in a similar way as the taxonomy by Jackson (1996).

2.3. Previously identified causes for challenges

As the previous section 2.2 points out, there is a possibility to categorize conflicts based on the reason for conflict. However, understanding the underlying cause of conflicts is also essential. Therefore, the following section outlines five previously identified underlying causes for challenges due to cultural and functional diversity in teams. The reasons for challenges vary widely, however, they were identified through exploring previous research done in diverse teams,

where the five overarching causes identified below were the most frequent causes from the conducted exploration.

2.3.1. Communication

As diverse cultural and functional teams form, there might be several differences in communication to take into consideration. Members from one functional background can be more used to a degree of functional expertise in their communication, likewise, members from different nationalities and cultures might have different ways of communicating. There is not only the understanding of other languages, it is also important to take into consideration the fact that members need to be able to speak the other language to communicate with each other smoothly. Through the previous research, communication has been recurring for creating challenges to functionally and culturally diverse teams.

Communication can be seen as the foundation of the technical team. Scarlat, Prodan and Zarsu (2014) describe how in technical multicultural teams that depend on thorough technical knowledge, language is one of the superior challenges. Agrawal (2012) saw communication as a threat to high performing teams and to utilizing diversity as the differences between individuals could create communication barriers. Moreover, Eboh, Asiah, Abubakar and Doko (2018) describe how poor communication in organizations can lead to low morale in teams, and that poor language proficiency due to multiculturalism can hinder productivity. Jayanthi and Rajandran (2014) also mention how multicultural teams face challenges due to communication, struggle to communicate and that these teams are subject to communication problems. Additionally, Edmondson and Harvey (2018) describe how the differences in language can disrupt communication in cross-boundary work as disciplines need to create a common lexicon. Lewis (2005) and Reynolds, Subašić and Tindall (2015) suggest that cultural norms have a deep-rooted influence on people's behaviour and how people react in certain situations. It can lead to different interpretations of a situation by different people based on their country of origin, which might cause conflicts. Furthermore, Laroche (2003) highlights that misunderstandings due to poor communication between technical professionals happen every day, and the compounded misunderstandings can accumulate to a complicated state for the employees. On the other hand, Jackson (1996)

acknowledges that communication challenges due to not having a common technical language is a difficulty, but not a major challenge. Nancarrow, Booth, Ariss, Smith, Enderby and Roots' (2013) empirical study concluded that communication in interdisciplinary teams is a general challenge, and a certain skill valued in good interdisciplinary teams is individuals with communication skills.

Communication in any form of the team appears to be central, yet, the previous research mentioned above highlights how many challenges are associated with it. It seems relevant to incorporate communication in this study to validate previous research and to gain insight for future diverse functional and multicultural technical teams and managers in order for the members to be able to co-exist. Therefore, the following hypothesis was formulated:

Diversity in terms of nationality or functional background can cause communication challenges in technical teams.

2.3.2. Status

Several previous studies indicate that members' perception of other members' status and stereotyping can create challenges and tensions in teams and technical teams. Jackson (1996) argues that managers frequently ignore the effects of attributes such as nationality, which can shape the behaviour of members in interdisciplinary teams and trigger stereotypes that affect the team members perception of others. Toegel and Barsoux (2016) also describe how members in teams quickly make judgements and put premiums on professional characteristics such as educational and functional backgrounds, which could discourage other team members.

Furthermore, Yong, Sauer and Mannix (2014) describe how interdisciplinary teams with a diverse pool of expertise have the risk of social categorization which can lead to polarization of teams, as members exclude and distrust each other based on their differences. Moreover, Agrawal's (2012) viewpoint is that a threat to diverse teams is that social categories are likely to cause difficulties for them, strengthening what Yong, Sauer and Mannix (2014) argue for. Managers have agreed to the fact that if a diverse team is to function, the difficulties from social categorization have to be controlled (Agrawal, 2012). Jackson (1996) also describes that status diversity hinders creativity and overall lowers the performance of multidisciplinary teams, as the risk of members with lower status does not get utilized. A study of interdisciplinary teams consisting of software developer

students and humanitarian students also showcased the risk for social loafing due to the fact that humanitarian students' input on interdisciplinary technical projects wasn't seen as equally important (Zhang & Pastel, 2015). Additionally, Edmondson and Harvey (2018) describe how functional and educational backgrounds produce status based on members beliefs or opinions and they emphasize how differences in interpretation generate conflicting states.

As several previous studies mentioned above have identified challenges in teams related to status, social categorisation and stereotyping due to nationality and functional background, it seems like a relevant area of research to validate and to gain more insight for technical teams and managers. Therefore, the following hypothesis was formulated:

Stereotyping, status differences and social categorization due to functional background or nationality can cause challenges in technical teams.

2.3.3. Teamwork and cooperation

Since interdisciplinary and multicultural teams come from several different backgrounds, there might be several different perceptions and previous experiences of what teamwork and cooperation are. The different perception of what teamwork and cooperation has in previous studies posed several challenges to diverse teams. D'Iribarne et al. (2020) conducted a study between French and Lebanese professionals and showed how mistrust escalated between the associates. D'Iribarne et al. (2020) argued that the situation occurred due to the fact that the two teams' cultural perceptions of what good cooperation was, differed and wasn't emphasized enough.

Furthermore, Laroche (2003) describes how a recurring issue in technical multicultural teams is interference. An example from Laroche (2003) is how team members offer help when the counterpart has not actively wanted it, resulting in one of the parties feeling that there is trespassing of responsibilities. In another empirical study by Barki (2001), interference was seen as a key dimension of interpersonal conflict between technical employees. Similarly, in the study of D'Iribarne et al. (2020), the French part wished for autonomy, while the Lebanese team wanted to actively engage in communication and find solutions collaboratively. A similar study by Matveev and Milter (2004) showed how cultural differences between Americans and Russians in

multicultural teams influence the definition of what teamwork actually means, and how the members differ in their degree of interdependence.

As several previous studies have identified challenges in teams related to teamwork and cooperation due to mostly nationality, it seems as a relevant area of literature to validate. Additionally, it is also relevant to gain more insight if diversity in the functional background poses any challenges for technical teams and managers as it could be likely that teamwork and cooperation are different, based on not only national but also functional background. Therefore, the following hypothesis was formulated:

Diversity in terms of nationality or functional background can cause challenges in teamwork and cooperation in technical teams.

2.3.4. Working Methods

As functionally and culturally diverse teams form and work on projects, there are several previous methods and ways of thinking and each member might carry a different method to the team due to their background. A holistic description of the challenge is that “Different people thus may look at the same phenomenon and each see different problems, opportunities, and challenges.” (Edmondson & Harvey, 2018, p.6). For example, Pastel and Zhang (2015) highlight how software engineers prioritize functionality at the expense of usage. As seen in previous studies in technical and non-technical teams, different working methods of members have created several challenges.

Laroche (2003) describes how certain multicultural technical teams have members that are more or less analytical in their way of working. Therefore, the team can get polarized as members disagree on the required amount of analysis before moving forward. Toegel and Barsoux (2016) see this as potentially the biggest source of conflict as there can be tension between members in teams because they differ in their emphasis on analysis. Basirati et al. (2020) highlight how differences in methods create problems as teams with a certain method (e.g. waterfall) have to cooperate with another method from a different team, which can generate conflicting situations due to the differences in work processes. Toegel and Barsoux (2016) also mention how the work process of team members with a background in business administration and science differ and lead to disagreements. The business administration students seek predictability and clear expectations where science employees see failing projects as standard in the work process (Toegel & Barsoux,

2016). Furthermore, Scarlat, Prodan and Zarsu (2014) emphasize that two main areas are most important when managing a multicultural technical project team; these are to create a collective understanding of requirements and problem-solving techniques.

As the previous research points out, several challenges have been related to the methods of working in technical and non-technical teams, implying a relevant area of research to validate. Therefore, the following hypothesis was formulated:

Differences in working methods or working processes or tools used can cause challenges in technical teams. Lastly, Basirati et al. (2020) described how a certain method such as waterfall determines the work processes for technical teams. Therefore, providing more understanding about the conflicts or tensions surrounding this central area of a technical team could be of great value for future teams and managers.

2.3.5. Misunderstandings and mistrust

Bringing a heterogeneous group together makes for several different realities, and there are subtle differences in actions and behaviour. Toegel and Barsoux (2016) describe how in diverse teams the behavioural and professional norms of different cultures can lead to challenges. The main problem from Toegel and Barsoux (2016) seems to be that the different members of the team are acting in line with their own culture and unconsciously aggravating other cultures in the team, which can lead to several consequences such as negative stereotypes and alienation between members. Knight (2015) also describes how factors such as communication style and differing views of hierarchy can create misunderstandings and tensions, where the cultural baggage is the driving force.

Furthermore, a differing viewpoint about deadlines has previously been a factor to drive conflict in teams, as Toegel & Barsoux (2016) describe that team members lack a coherent understanding of the significance of meeting deadlines. Similarly, Pant (2016) describes how cultural diversity can lead to loss of trust in teams as the effective communication regarding objectives and deadlines within the team isn't sufficient enough. Moreover, Saunders (2018) also mentioned that hitting deadlines is a big challenge in multicultural teams, and there needs to be an understanding in the team. Furthermore, an empirical study by D'Iribarne et al. (2020) shows how misunderstandings

led to conflict between an alliance of Swedish and French companies as the two parts failed in their communication leading to misunderstandings, and ongoing tensions.

As several previous studies have identified, several challenges in teams have been related to misunderstandings. Several of the previous research conducted points to the fact that nationality can cause misunderstandings in teams, therefore it seems a relevant area of literature to validate for technical teams as well. Additionally, it is also relevant to gain more insight if the diversity in functional background creates challenges for technical teams and managers, as it could be that there are different causes of misunderstandings, not dominated by nationality, but also functional background. Therefore, the following hypothesis was formulated: *Diversity in terms of nationality or functional background can cause misunderstandings and mistrust due to differences in behavioural norms and perceptions about team members in technical teams.*

2.3.6. Summary of the hypotheses

The following five hypotheses were as stated formulated in advance of the collection of empirical data based on the research questions and previously conducted research:

Hypothesis 1: Diversity in terms of nationality or functional background can cause communication challenges in technical teams.

Hypothesis 2: Stereotyping, status differences and social categorization due to functional background or nationality can cause challenges in technical teams.

Hypothesis 3: Diversity in terms of nationality or functional background can cause challenges in teamwork and cooperation in technical teams.

Hypothesis 4: Differences in working methods or working process or tools used can cause challenges in technical teams.

Hypothesis 5: Diversity in terms of nationality or functional background can cause misunderstandings and mistrust due to differences in behavioural norms and perceptions about team members in technical teams.

2.4. Chapter Summary

This chapter presented the theoretical framework for this study. The chapter started with a definition of diversity and diversity management, highlighting the broadness of diversity and why

the study used a specific definition of diversity. Secondly, diversity management was presented, highlighting the complexity of managing diversity. The chapter then transitioned to five recurring challenges due to diversity in multicultural and multifunctional teams which were identified through exploring previous research. Communication has posed several challenges where not only understanding the speaking language is troublesome but also to ensure cross-functional understanding. Challenges due to status were also frequent, where the risk for social categorization and stereotyping were prominent. Differing working methods have also posed troubles, where the different processes and approaches to projects cause challenges. Misunderstandings and mistrust have also posed challenges, highlighting the complexity of having different members acting in line with their own cultural and functional background. Lastly, five hypotheses were formulated which were based on the previous research.

3. Method

In the chapter of method, a thorough description of the data collection process is made. The chapter starts with the research philosophy followed by the research approach and research design. The chapter then continues with an explanation of the sampling method and the data collection method. Following the sampling method and data collection method, is the format of semi-structured interviews, how these were designed, conducted, and analyzed. The chapter concludes with a discussion of the reliability, validity, generalizability, key ethical points and limitations of the method.

3.1. Research Philosophy

The term ontology is according to Saunders, Thornhill and Lewis (2019) the assumptions of our reality. The research in this study is conducted with the intent to develop new knowledge, and during the process several ontological assumptions were made (Saunders, Thornhill & Lewis, 2019). In order to maximize the coherency of the assumptions made, a uniform ontological approach was determined. Saunders, Thornhill and Lewis (2019) describe how a subjectivist researcher often derives results from opinions, narratives and multiple realities. As the study is creating knowledge based on these criteria, subjectivism was deemed most suitable, as opposed to the objectivist approach which considers facts, and often numbers as knowledge creators (Saunders, Thornhill & Lewis, 2019). The most suitable subjectivist ontological approach that the knowledge in this study is based upon is social constructionism. Social constructivism emphasizes that reality is created intersubjectively, and acknowledges that reality differs and is context dependent for individuals (Saunders, Thornhill & Lewis, 2019). Indeed, in diverse technical teams, there are several realities, studying each of these realities is necessary. Furthermore, Saunders, Thornhill and Lewis (2019) describe how there are several different philosophical stances that one can take. The philosophical stance thought best suitable for this study was interpretivism. Interpretivism often studies individuals' experiences and different meanings with the intention of better understanding the organisational realisms (Saunders, Thornhill & Lewis, 2019). Seeing that tensions or conflicts can arise from different meanings from individuals, studying these different meanings is suitable for this study.

3.2. Research Approach

The approach of the study is abductive. Through a comprehensive search in previous research, several factors that could cause challenges in diverse technical teams were identified and from these factors, several hypotheses were derived to test through the semi-structured interviews. Even though using hypotheses is usual in quantitative research according to Thornhill, Lewis and Saunders (2019), they were also formulated in this qualitative research. The hypotheses were a logical extension of the research questions and the previous research, intended to guide the reader. Furthermore, the study tries to conclude if these factors of challenges can indeed cause tensions or conflicts due to functional or culturally diverse technical teams, which Saunders, Thornhill and Lewis (2019) describes as a deductive approach. However, the risk of using a deductive approach would be to miss other factors that could be a cause of challenges in diverse technical teams. Therefore, the study acknowledges the value of an inductive approach which often uses data to form theory (Saunders, Thornhill & Lewis, 2019). Hence, the questionnaire also included questions that were not based on previously conducted research and the research approach is abductive (Saunders, Thornhill & Lewis, 2019). The characteristics of these questions were more open-ended as opposed to the questions that intend to directly confirm or disconfirm previous research.

3.3. Research Design

Saunders, Thornhill and Lewis (2019) describe how qualitative studies can be conducted with a multi-method, which was incorporated in this study. Saunders, Thornhill and Lewis (2019) also describe how research can be conducted with a mixed methods approach combining quantitative and qualitative data. This approach was neglected due to the relatively short time horizon of two months. A quantitative approach was not chosen as research design as the research questions and purpose of this study is more in line with the characteristics of qualitative research (Saunders, Thornhill & Lewis 2019). The study is of cross-sectional nature, as we only interview the interviewees once (Saunders, Thornhill & Lewis, 2019). Due to the time constraints of only two months, a longitudinal study is not possible which would mean conducting several studies on the same interviewees, but on a longer time span.

3.3.1. Research Strategy

The research is conducted as a case study. A case study is a research strategy that aims to understand a certain topic within its context (Saunders, Thornhill & Lewis, 2019). The setting of this case study is the functionally and culturally diverse technical teams. A case study includes experiences of being in a real life context (e.g. of a functionally and culturally diverse technical team), meaning there is possibility to develop rich empirical description (Saunders, Thornhill & Lewis, 2019).

3.4. Sampling

Saunders, Thornhill and Lewis (2019) describe that the choice of sampling technique is based on the research question and the goal of the study. As the research questions for this study can not be answered by collecting data from the general population, a logically specific sample was created (Saunders, Thornhill & Lewis, 2019). The specific sample was created as a means to collect reliable data for answering the research questions and additionally as a step to improve the generalizability. Three criteria had to be fulfilled and were determined beforehand for the sample (see Appendix A for the summary of the sample). Firstly, the interviewee had to be or have been a technical professional meaning that the person is or have been working professionally in a technical role. Secondly, as the research is conducted on challenges and conflicts in technical teams, the interviewee had to have been a member of a technically diverse team that had or have a ratio of 60% or more in either cultural diversity or functional diversity. This ratio of diversity was determined on the basis of judgement, as the majority of the team, therefore, is different and these differences due to diversity will be noticeable. Thirdly, the criterion was that the interviewee had to work within the EU and Switzerland. This was a step to decrease the geographical spread of the sample, thus narrowing down the scope of the sample and improving the generalizability in diverse technical teams in the EU and Switzerland.

As a distinct sample was created, a sampling technique of non-probability sampling was used. Non-probability sampling is a suitable method when you have a specific sample that is within a sampling frame (Saunders, Thornhill & Lewis, 2019). Furthermore, Saunders, Thornhill and Lewis (2019) also claim that a combination of sampling methods are common in research studies, which also was the case in this study and the methods used were self-selection sampling and snowball sampling. Self-selection sampling is a voluntary method where researchers first announce the need

for participants for a study and thereafter ask if the participants want to take part, which is typically done using media (Saunders, Thornhill & Lewis, 2019).

Potential interviewees were approached through either LinkedIn or email. The interviewees were identified by searching on LinkedIn for common technical professional titles, including “software developer”, “IT-Consultant” and “software engineer” etc. Afterwards, a network invitation with a personalized message was sent to approach the interviewees. Some of the interviewees were asked after their confirmation of their participation in the study if they had colleagues or members of their technical teams which they could ask if they wanted to participate. This method of sampling is referred to as snowball sampling, which is useful for populations that are rare, thus hard to approach (Saunders, Thornhill & Lewis, 2019).

3.5. Data Collection Method

Two main sources of data collection have been used for this study, which is primary and secondary data. Primary data collection has been described by Saunders, Thornhill and Lewis (2019) as data that is distinctly for a study, and secondary data as data collected for another purpose. Firstly, primary data was collected through the semi-structured interviews of people with experience of working in diverse teams (according to the criteria mentioned earlier), specifically for this study. This data was collected not only to confirm or deny hypotheses built through the secondary data (collected through previous literature) but also to gain additional insight on most common types and causes of conflicts and challenges in these teams. Secondly, secondary data has been used to study multiple types of challenges and conflicts along with common causes of these challenges associated with diverse teams by previous researchers.

3.5.1. Semi-Structured Interviews

According to Saunders, Thornhill and Lewis (2019), the most common typology used to differentiate interviews categorises interviews into structured, semi-structured and unstructured interviews. Our research is based on collecting data about experiences of our interviewees in different contexts and situations in order to identify similarities and derive meaningful results based on those. Semi-structured interviews are mostly referred to as qualitative research interviews where the researcher has a list of questions, themes and the ability to change the order of question

or explore further through additional follow-up questions (Saunders, Thornhill & Lewis, 2019). Based on our purpose of research, we chose semi-structured interviews to study tensions or conflicts associated with diversity in an organizational context. With the permission of our interviewees, all interviews were transcribed and analyzed.

3.5.2. Interview Design

The interview was divided into two parts. The first part consisted of open-ended questions (see Appendix A) to get data about participants' perception of challenges in their teams due to diversity. Open-ended questions were designed in a way to avoid any biases that might occur by feeding interviewees the keywords, to increase the reliability of study. These questions were designed to discuss each dimension of diversity individually to ensure that we get the participant's perspective on both dimensions separately. After getting responses to these open-ended questions researchers asked for follow-up questions based on the context of the answers to previous questions along with examples to explore further in detail.

Second part of the interview was designed to validate our findings from the previous research and data collected through previous researchers' study. This section of the interview consisted of a set of questions (see Appendix B) to test the formulated hypotheses (discussed in chapter 2) where the interviewees didn't have to answer based on either functional or cultural background, instead they could answer the questions considering either any one of the dimensions or both combined. In addition, these questions were also designed to either validate or disconfirm the common reasons of challenges and conflicts due to diversity gathered through the previous research. Even though the interview was designed and structured, researchers had the option to ask follow-up questions based on the answers of participants. The purpose of follow-up questions was largely to explore areas that were mentioned by participants during the interview, areas that were not considered by researchers during the interview design stage.

3.5.3. Interview Process

Due to the ongoing pandemic (Covid-19), all interviews were conducted virtually via Zoom and audio recorded through Mac's built-in audio recording tool. Before the interviews, all participants were sent a 'Consent Form' (See Appendix C).

In total, 13 people were interviewed to collect data for this study. Out of 13 interviewees, 6 participants were in managerial positions who had the experience of leading or managing diverse teams. 2 participants (1 manager and 1 team member) belonged to the same team. Further as presented in Table 3.1, interviewees belong to 7 different countries of origin which offers broad insight and improves the quality of this research. More information regarding the country of work and total work experience of interviewees which can be interesting for the reader is listed in Appendix A. The data presented in Appendix A also shows that all participants were working in the EU in 5 different countries except one interviewee who works in Switzerland. All participants agreed to the condition listed in the *Consent Form* (Appendix C) that they have the experience of working in at least 60% diverse team with respect to either cultural or functional background of diversity. Table 3.1 shows that most of the participants have extensive experience of working in diverse teams.

Table 3.1: Details of the Interviewees

Interviewee	Role	Country of Origin / Nationality	Functional Background	Experience of Working in Diverse Teams (years)
Interviewee 1	Team coach	Swedish	Bachelors in Pedagogics	15
Interviewee 2	PhD Researcher	Swedish	Msc in Electrical engineering	21
Interviewee 3	Software developer	Swedish	Masters in Corporate Entrepreneurship and Business Design	2
Interviewee 4	IT-Consultant	Swedish	Masters in Mechanical Engineering	2
Interviewee 5	Agile Coach	Swedish	Masters in Computer Science	7
Interviewee 6	Technical Project Manager	U.S.A	Master of Science in Management	10
Interviewee 7	Technical consultant	Greek	Masters in Management	6
Interviewee 8	Managing director	Swedish	Masters in Industrial Engineering and economics	10

Interviewee 9	Senior software developer	Swedish	Masters in Computer Science	5
Interviewee 10	Software Engineering Manager	Pakistani/Dutch	Bachelors in Software Engineering	6
Interviewee 11	Technical Lead	Dutch	Bachelor in IT	2
Interviewee 12	Graph Techs Specialist	French / Swedish	Masters in Data Processing	9
Interviewee 13	Product Owner	German	Masters in Management	15

At the start of the interview, interviewees were given a description of the research purpose by one of the researchers. Then the same researcher asked for permission to record followed by taking the verbal consent from the participant to ensure the participant had read and understood the consent form and agreed to all the information provided in the consent form. The other researcher started with the first section of questions and follow-up questions. During all interviews, one researcher asked all pre-designed questions and the other researcher took notes. For follow-up questions, both researchers asked follow-up questions to the interviewees as per their analysis of the situation to ensure effective exploration of all the topics discussed.

All the interviewees were booked for one hour of interview, however duration of each interview was different as per participants' experiences. The average length of the interview was approximately 39 minutes.

3.6. Data analysis

The first step to prepare the data for analysis was to create transcripts from the audio recordings of the interviews. Transcripts were created by using Microsoft Office 365 transcription feature, which can transcribe audio files to text in word documents. All transcripts were thereafter cross-checked and adjusted in order to ensure that there were no incorrect sentences. This was done by listening to the interviews and meanwhile making changes in the written document. The data collected was then categorized using codes, following the method described by Saunders, Thornhill and Lewis (2019). The data were grouped in the codes in order to manage and meaningfully analyze the data, which according to Saunders, Thornhill and Lewis (2019) is an

essential part of analyzing qualitative data. The coding was done by methodically going through each transcript of the interviews and sorting out actual paragraphs from the interviewees, in line with the description of coding qualitative data by Saunders, Thornhill and Lewis (2019). One researcher used Nvivo, which is a software made for analysing especially qualitative data. Whereas the other researcher used Microsoft Word to colour-code the data. The analysed data was then discussed and compared in order to see if there were any notable differences between both researchers' analysis. In order to categorize the conflicts, type of conflict was analyzed, determined and categorized according to the terminology of Basirati et al. (2020) with human-rooted and non-human rooted conflicts. The hypothesis was deemed supported if one or more interviewees had experienced tensions or conflicts regarding the question.

3.6.1. Reliability

Reliability is a measure of up to what extent the research has been unbiased and produced consistent results in a certain period of time across different items (interviewees in this case) (Sekaran and Bougie, 2016). Creswell (2014) also indicates reliability as consistency of research across different projects. Hence, the reliability of this study was increased by conducting the interviews in a semi-structured way while ensuring that each interviewee was exposed to a fixed amount of the same questions (Appendix B) to maintain consistency. Moreover, in order to increase reliability, all the interview data is presented anonymously in the thesis as a way to gain more trust and openness from interviewees in their answers during the interview. The researchers acknowledge the participant bias as a threat to reliability, and the anonymizing of the data collected was a step to minimize this threat (Saunders, Thornhill & Lewis, 2019). The researchers also ran a pilot interview for testing to make sure there are no ambiguous concepts related to any question for the participants. Furthermore, to try to minimize the participant error mentioned by Saunders, Thornhill and Lewis (2019), the interviewees were scheduled for a one hour time, ensuring sufficient time to complete the interview. Additionally, the participants were contacted and scheduled for interviews with sufficient time margin between the day of interview and the day of booking, ensuring that they could plan and avoid a sense of stress. In order to minimize the researcher error and researcher bias mentioned by Saunders, Thornhill & Lewis (2019), ample time was devoted to analyzing the data collected. The audio recording of interviews also makes sure that the researchers have the possibility to listen multiple times and make a sufficient analysis.

Lastly, the interview guide was overseen by peer-reviewers and in order to make sure that interviewees have the experience to work in diverse teams that are at least 60% diverse either with respect to culture or functional background, a condition in consent for to confirm about 60% diversity of team was included to further increase the reliability of the study.

3.6.2. Validity

Validity in qualitative research suggests that researchers ensure the accuracy of findings by implementing certain procedures to validate the findings (Creswell, 2014). The validity of this study was improved by conducting semi-structured interviews while following a protocol described in section 3.5.3. Further, by using a semi-structured approach, we ensured that all interviewees were asked a foundation of questions, and then the researchers could ask follow up questions which can both enhance and confirm that we understand the answer correctly. This also ensured that misinterpretations are minimized. Furthermore, the internal validity of the questions is also strengthened by using semi-structured interviews. The internal validity refers to a certain set of questions that measure what it is supposed to measure (Saunders, Thornhill & Lewis, 2019). As suggested by Creswell (2014), one of the strategies to enhance validity, *peer debriefing* was done where a peer reviewed and asked questions about the study. Semi-structured interviews allow for follow up questions, meaning that there is a possibility to ask a question again if the interviewee misinterpreted the question. This can be seen as a strong prospect of the qualitative method chosen in this study, as opposed to a quantitative measure which leaves room for more misinterpretation from the participant. Finally, during the data analysis stage, coding and categorization of collected data were done separately by both researchers using different programmes to see the correlation in individual findings. This increased *convergent validity* of our study as two different instruments measured the same set of data and obtained results that are highly correlated (Sekaran and Bougie, 2016).

3.6.3. Generalizability

Generalizability measures up to what extent findings of research developed in one context can be applied to another context or another organizational setting (Sekaran and Bougie, 2016; Creswell, 2014). The greater the similarity in answers of interviewees, the greater is the generalizability. The research questions are intended to answer causes of tensions or conflict due to diversity that are

focused on the functional background and cultural diversity, therefore, the generalizability will be mainly in these areas. As every team is unique the results will be specific to the context of the teams in the study, therefore, hard to generalize to the bigger population. However, the results could possibly be compared to teams that are of similar size, and with members that share the same characteristics as the ones interviewed. All the interviewees that participated belong to technical teams operating in the EU and Switzerland with the majority of interviewees (11 out of 13) working within either software development or IT teams. As mentioned by Saunders, Thornhill and Lewis (2019), generalizability increases the strength of qualitative research, the result of this study can also be generalised for technical teams especially software development and IT teams working in the EU.

3.7. Limitations of method

Complementing the qualitative data with quantitative data would have enhanced the overall result of the empirical data. Saunders, Thornhill and Lewis (2019) describe how there is a greater possibility to not only link findings but also elaborate the meanings of these by a mixed approach. The severity of the conflicts are also hard to determine through the qualitative data, and a quantitative measurement with a likert scale would enhance the significance of each conflict and related cause. As this is a case study, the results are highly context dependent. This context-dependency is also mentioned by Saunders, Thornhill and Lewis (2019) as a common critique for case studies. The cross-sectional nature of the study could also be seen as a limitation. A longitudinal study could have enhanced the data collection, as the interviewees would be able to provide examples of a certain period of time for potential tensions or conflicts, instead of the accumulated previous experience. Saunders, Thornhill & Lewis (2019) see this capacity for development as a prospect of a longitudinal study.

3.8. Ethical Considerations

Taking ethics into consideration is fundamental in the context of research projects when collecting primary data from individuals (Saunders, Thornhill & Lewis, 2019). In this study, ethics were considered and the usage of a consent form ensured that the interviewees understood the scope of their participation in the study. As tensions or conflicts in the workplace can be a sensitive area to

highlight, the privacy of the interviewees was fundamental. This privacy was kept safe by anonymizing the name of interviewees, company names and other factors such as age or gender. Another fundamental point included in the consent form was voluntary participation. The interviewees were informed about this and were not forced in any way to participate in the research. Furthermore, there was a possibility that the interviewees did not want to answer a question about a certain tension or conflict in their professional experience, thus a point in the consent form ensured full freedom of interviewees to refrain from answering a question and withdrawing from the study at any time. For the full list of points in the consent form see Appendix C.

3.9. Chapter Summary

This chapter described the process of data collection. It started with explaining the research philosophy chosen in this study based on social constructivism and interpretivism, meaning reality is context dependent for individuals and individual experiences have different meanings. Further, the research approach in this chapter described the abductive nature of this study as it not only involved testing of hypotheses but also explored other causes of conflicts and tensions through open-ended questions. In addition to the case study nature of this research, a qualitative approach was chosen for this study as opposed to quantitative due to the time constraints and nature of this research, as explained in the research design section. Afterwards, three criteria for sampling were chosen for the study i.e. interviewee must belong to the technical team, participant's team must have a minimum of 60% diversity and the interviewee must be working in the EU or Switzerland. Participants were chosen through self-selection sampling and snowball sampling, they were contacted through LinkedIn or emails. Subsequently, hypotheses formulated from a secondary source of data (collected through literature review) were tested during semi-structured interviews which served as primary source of data, followed by the description of the process of how interviews were conducted. It is then followed by data analysis description explaining interviews were transcribed and coded to deduce meaningful findings. Several steps were taken to ensure higher reliability, validity and generalizability of this study. These steps included a fixed number of questions for all participants, ensuring anonymity of participants, early scheduling of interviews, audio recording, peer-review of interview guide and semi-structured interview format with follow-up questions. The results of this study can be generalised for technical teams (more in

software development teams) working in the EU. Lastly, the chapter concludes with a discussion on limitations and key ethical points associated with the method.

4. Data Analysis

In the chapter of empirical data and analysis, the results from the empirical data collection will be presented, starting with a data presentation. The chapter then transitions to present the result from the empirical data in more detail. The structure follows the same as the structure is in the literature framework with communication, status, teamwork and cooperation, working methods and lastly misunderstandings and mistrust. The chapter ends with a summary of the chapter.

4.1. Data presentation

The interviewees had experienced several tensions and conflicts in their teams due to diversity in functional and cultural background. Table 4.1 presents a summary of the interviews conducted in this study, listed in hierarchical order with the most frequently mentioned cause for tensions or conflict first. The column of causes describes the underlying cause for the tension or conflict. The second column shows number of interviewees i.e. the accumulated number of interviewees acknowledging the cause for tension or conflict. The column of type of conflict describes the most frequently acknowledged reason for tension or conflict by the interviewees, additionally in this column the type of conflict is categorized with the terms of Basirati et al. (2020) with human-rooted conflict (HRC) and non-human rooted conflict (NHRC) marked in brackets. For instance, if an interviewee mentioned that there was a tension or conflict due to a language barrier, the underlying cause was analyzed as communication and the type of conflict was a language barrier (HRC). Lastly, there were causes that were interrelated, which will be highlighted in the discussion chapter.

Table 4.1: Data table for all the interviewees response to causes of conflicts

Causes	Number of interviewees	Types of conflicts
<i>Misunderstandings and mistrust</i>	11	<ul style="list-style-type: none">❖ Clarity in expectations (NHRC)❖ Misunderstandings in expressions and language (HRC)❖ Functional background (NHRC)❖ Judging intentions wrongly

		<p>(HRC)</p> <ul style="list-style-type: none"> ❖ Lack of trust due to nationality (HRC) ❖ Lack of trust due to functional background (HRC)
<i>Communication</i>	10	<ul style="list-style-type: none"> ❖ Language barrier (HRC) ❖ Communication style (HRC) ❖ Lack of understanding of technical language (HRC)
<i>Working methods</i>	9	<ul style="list-style-type: none"> ❖ Non-compatible methods (NHRC) ❖ Lack of shared and clear understanding of method (NHRC)
<i>Teamwork and Cooperation</i>	7	<ul style="list-style-type: none"> ❖ Connection with team (HRC) ❖ Priorities with in team (HRC) ❖ Negative perception of nationality (HRC) ❖ Communication between members (HRC)
<i>Status</i>	6	<ul style="list-style-type: none"> ❖ Triggered by nationality (HRC) ❖ Triggered by functional background (HRC)
<p>Other Causes:</p> <ul style="list-style-type: none"> ● Decision Making ● Attitude towards authority and responsibility 	<p>2</p> <p>6</p>	<ul style="list-style-type: none"> ❖ Cultural influence on decisions ❖ Cultural influence on perception of authority and responsibilities

4.1.1. Communication

Almost all interviewees claimed that communication had been a cause of tensions or conflicts in technical teams due to cultural and functional background in this study. Five interviewees claimed that a language barrier due to nationality was a cause of tensions or conflicts in their teams. Two interviewees claimed that the language barrier led to minor misunderstandings, but the interviewees didn't classify it as a conflict, whereas the other three interviewees classified it as a

conflict. The conflicts due to language barrier were described by several interviewees to be a cause for misunderstandings, and interviewees further commented on how language barriers can lead to misunderstandings in requirements and subtexts missing in the projects. The language barrier had in other cases created conflicts between members of teams because of the varying levels of proficiency in the shared used language. The three interviewees did however not see these conflicts as severe, and they were all resolved at the expense of time.

Five of the interviewees explained challenges and conflicts due to the difference in communication style driven by cultural differences. Two interviewees explained how members from certain countries are very direct in their communication, and that conflicts or tensions can be related to this as there is a cultural difference.

“It definitely creates a problem [...] I mean it's also part of you can say which nationality you are coming from. Let's say Dutch people here are quite straightforward. They would say things in your face, you would not like it.” - Interviewee 10

On the other hand, three interviewees of these five who mentioned tensions or conflicts due to communication highlighted that certain members from other countries that are less direct, and more polite have caused conflicts in projects, creating confusion and a lack of direction. Talking about the language tone perception associated with different countries, one interviewee mentioned that:

“....and this is definitely diversity issue, specifically because of the language, in the UK people are so polite they can never tell you directly like as opposed to Germany where they say you do this, that's it three words” - Interviewee 7

Five interviewees explained challenges in communication due to the technical language resulting from different functional backgrounds, whereas three mentioned technical language as a cause for tensions or conflict. One interviewee explained the challenge of having members with MBA

degrees hamper the discussions as there is a lack of technical knowledge. Moreover, one of the interviewees didn't see any conflicts arise but highlighted the challenge like this:

“When you have in the same team for instance people working with strategy, scouting for instance the environment of the company and defining how the future might look like, and big trends, and looking in to the future, and then you have to bring this information to transfer this information to the developers, and I have seen that the communication between these two doesn't work fine, so you don't have the correct language between the developer to develop the solution and from the strategist who is supposed to guide the work of the developer.” - Interviewee 13

Another interviewee explained that the lack of understanding of just one technical keyword can lead to that the team headed in different directions, creating conflicts. The third interviewee described that the technical language can give rise to a lack of understanding between members in the team, as even though they speak the same language, there is no understanding between the different team members. The fourth interviewee also described that a difference of terminology led to conflict, as the requirements weren't understood from the start of the project.

“I had a lot of conflicts like that with let's say my product owner because of these kinds of topics, and that's mainly because they don't understand the technicalities of these kinds of things[...]” -

Interviewee 10

None of these three interviewees saw these conflicts as severe and they were all resolved at the expense of time.

4.1.2. Status

Almost half of the interviewees stated that status had created tensions or conflicts in their team. Three of the interviewees stated that conflicts were related to status based on nationality. One interviewee described how certain countries are given more chances to lead, which have been related to conflicts.

“ yes, maybe because of somebody is from the U.S. they think they are the best, maybe that can happen. But apart from that no, I mean the country can be one reason [...] I have seen a difference that people from let's say these first world countries are treated as more okay, they can be in control, they can be good managers [...] you can say that they are treated as people who can lead and the other people are not given this kind of chances. ” - Interviewee 10

Similarly, another interviewee stated that conflicts arose because few members of a team were unwilling to allocate work to another team in another country due to their nationality. The team, in that country, which was being neglected, was able to sense this reluctance and this situation affected their performance negatively. Another interviewee stated that there have been conflicts related to status to a certain extent, as there were members in the teams that felt more educated due to being from a certain region, and that there had been stereotypes over people from other countries.

Other interviewees stated that conflicts were related to status based on functional background. One interviewee described how individuals in the teams perceived different roles as adding different amounts of value which have resulted in problems due to the functional background. Another interviewee described how certain members neglected to explain and involve certain members in the team due to their functional background, because of their lack of technical background.

“you also have people who don't explain a simple language to someone else, so obviously when you have an issue you have to be able to explain it to non-technical. People can sometimes have a bit of prejudice towards people with other backgrounds and they wouldn't explain the project manager because they wouldn't get it. ” - Interviewee 7

Some interviewees had experienced stereotyping as related to tensions or conflicts in their teams. One example is how a company hired one of the interviewees based on a certain technical skill that other team members didn't possess, and then the interviewee wasn't seen as technical as other members of the team. Another interviewee described how members of the team had negative stereotypes due to the functional background of certain roles. It was not only diversity in functional background that caused conflict, as one interviewee described how Christmas, hence cultural diversity created conflict. The main issue was that several members in a team celebrated Christmas

and had discussions about how to celebrate and plan, whereas one certain member did not celebrate Christmas, and felt left out. Other aspects of cultural diversity had also created conflict, where members had stereotyped the people belonging to certain countries as being lazy.

More than half of the interviewees stated that there had been no conflicts or tensions due to status, due to functional or national background. One interviewee explained how people were well aware of what the different roles of people are. Similarly, another interviewee stated that people are well aware of the education of people and what to expect.

4.1.3. Teamwork and Cooperation

Just over half of the interviewees stated that teamwork and cooperation had been related to tensions or conflicts in the teams. Two interviewees highlighted that differing views on how much help you provide to your teammates have been related to conflicts. One interviewee mentioned that some members think that you should help everyone in the team. Similarly, another interviewee described how there had been conflicts since some members are more or less helpful:

“One person [...] thinks [...] their notion of teamwork is to say “I don't know it, don't bother me”. The other is to say “I don't know it, but here's somebody who may be able to help you”.” -

Interviewee 6

Another interviewee described how different functional backgrounds can be less involved in the team, which have been related to tensions or conflicts:

“They think, I am working on this and this piece is going to fit this, and in their mind they probably think this is my job and I have to write this code, whereas people in business are available to see out of the box and can see it from another perspective.” - Interviewee 7

The interviewee further described how members have had a hard time understanding that teamwork isn't only about splitting tasks and then disconnecting from the team, it means that you still have to communicate and create something that connects with other parts of the team.

Other interviewees further highlighted that conflicts had arisen from differing views on priorities of what is important in the teams. One interviewee described a conflict between a software

engineer and a marketing person, where the software developer prioritized visualizing, whereas the marketing person prioritized a bigger display. Another interviewee described how the different perspectives of what is right and what is wrong from members in the team have led to conflicts.

One interviewee described how conflicts had been related to that members in the team did not want to cooperate with certain countries due to a negative perception of these people. Another interviewee described how conflicts were related to cooperation as members were reluctant to collaborate with certain members as they don't understand the value they add to either the product or the team:

“[...] But I think some people have an easier time doing so than others and especially coming back to if you feel like someone else is not adding as much value as the rest of the team [...] probably it's gonna be a potential that you cannot collaborate less with that part because you feel like it doesn't add as much value to either the product, the team, or yourself.” - Interviewee

5

Another interviewee stated that the conflicts have been related to cooperation in terms of communication, where the interviewee stated that the cooperation had been stifled due to this. Similarly, another interviewee stated that the conflict had been related to cooperation, where the communication or trust can create frictions and conflicts.

“I do remember one example a while ago where we had an intern that came in to work together with someone who was really experienced, and he started to really rebuild a part of the code while he was just assigned to do one specific task and he completely rebuilt a lot of stuff. And then the original bug that he was supposed to fix was still in there and that, yea, that caused the conflict. Yeah, the manager was basically saying “What have you been doing the last two weeks?” - Interviewee 11

4.1.4. Working Methods

A majority of the interviewees also claimed that different methods had been related to tensions or conflicts due to nationality and functional background in this study. One interviewee described how the dilemma of having differing methods implies different ways of working with feedback, where conflicts arose due to the fact that a “waterfall” approach was used in one team, whereas the other team worked in “sprints”. Similarly, another interviewee described that different methods such as “agile” or a “waterfall” have had a big impact and are related to conflicts. Another interviewee explained that the method definitely is related to conflicts as members who are not used to a method can have a hard time understanding the value that some people add, since they haven’t seen that specific method before. Similarly, another interviewee who also saw the methods related to conflicts explained that certain members skip certain steps in the method as there is a lack of understanding about the value of these steps, which caused tensions.

“So, for example, [...] if you have something that would normally be a five step process and people have a different education that might skip step two and four because it seems like a waste. But uh, it usually isn't. It's usually there for a reason, and [...] if you don't have the education to know why, then you might be tempted to skip it, but that can cause problems because there is a reason.” - Interviewee 4

Another interviewee explained that the working method was partially connected to conflict, where there were two different views between leader and member on the mandate that the leader had to make decisions, which was not made explicit.

Three interviewees expressed that they experienced resistance in their teams when they tried to implement change in their teams regarding different working methods with one interview stating that few team members who were used to work in conventional project planning didn’t want to attend stand-up and retro meetings which were essential parts of the new working method. Two of these interviewees also expressed that functional background affected team member’s preference for working methods which often resulted in conflicts which were not constructive.

“It is, so that's very spot on. Yes, a lot of fun things happen because people don't want to change [...] Let's say they know one process and working in the one way of working. And now you're

asking them to change, they can behave in different ways to be honest, um, well, we will see that their performances decreased, you will see that they are not contributing to things anymore [...] they're kind of doing some political things that they should not do within the team. So yeah, it can lead to even a bigger conflict.” - Interviewee 10

Several interviewees stated that methods had not been seen as related to conflicts or tensions. Two of these interviewees explained that it was not related to either the functional or cultural diversity. One interviewee said that the company specifically hires people that are used to working with the same method. Another interviewee said that generally, if there is a difference in method people are able to overcome them, rather than just complaining over it.

4.1.5. Misunderstandings and mistrust

Misunderstanding has been identified as one of the most common causes of tensions or conflicts in this study. A majority of the interviewees stated that misunderstandings had been the cause of tensions or conflicts in their team, due to nationality and functional background. Several interviewees highlighted how clarity in the projects have been a cause for misunderstandings and conflicts. Other interviewees highlighted how different members due to nationalities have had misunderstanding of time and deadlines, which have been related to a source for conflict.

“Misunderstandings has been the source for very much frustration and especially when it comes to leaders coming in with a quite weak message or what needs to be done.” – Interviewee 5

Talking about expectations and lack of clarity, another interview expressed that:

“And these types of minor conflicts they can appear, which of course can escalate because if what you were trying to do is pretty urgent or pretty important and you didn't set the expectations right or you didn't communicate and you did something else then you have no time to fix it and that can damage the team and the business.” – Interviewee 7

Several of the interviewee's stated that misunderstandings have been caused by different expressions and language. Interviewees highlighted the cultural aspect affecting the interpretation of a situation in such a way that the choice of words to deliver a message is different in different

cultures and it can be interpreted differently if the person on the receiving end is not from the same culture.

“[...] so, the word choice combined with the speed of speaking can cause a lot of misunderstandings [...] if they misunderstand a word that's being used it may be offensive to them, so you have to be careful not only with what interpreting what people are saying” –

Interviewee 6

One interviewee described how there was a member who perceived that a racial comment was made, although it was not intended to be. Another interviewee highlighted how important it is to understand the culture of each other, otherwise it can definitely raise conflicts when communicating, and another interviewee mentioned that challenges arose due to members having a lesser understanding of the shared language which have led to people misinterpreting, which affects the team performance.

“[...] there are situations [...] where misunderstandings have happened, or different interpretations of situations that I think is due to different [...] cultural backgrounds and also different educational backgrounds [...] I think it does (affect team performance) [...] and that's not efficient” - Interviewee 1

Furthermore, the interviewees highlighted misunderstandings due to the functional background as members have misunderstood the technological limitations which have resulted in tensions or conflicts in the team.

“[...] not understanding the technological limitations and so on of work that will be performed or proposed by someone without a technological background or a background in software development. So yeah, in that case [...] I've had some conflicts in regards to misunderstandings here.” - Interviewee 3

Talking about the frustration caused by different thinking styles influenced by functional backgrounds, one interviewee mentioned that:

“That's a quite common pattern actually. That engineers, they think more [...] in functional terms rather than customer focused terms.” – Interviewee 13

Similarly, functional background has posed tensions or conflicts when members have assumptions about existing knowledge due to their functional backgrounds which leads to misunderstandings.

“So if [...] have there been situations where I or a colleague has learned something in school and then has assumed that that is shared knowledge that can cause conflict and so if it's something that I wasn't familiar with [...] but they sort of assumed that I already knew, that can cause a conflict.” - Interviewee 4

Another interviewee also shared experience of misunderstanding due to different understandings of a task that needed to be coordinated between two members of different functional background:

“They misunderstood something but they didn't realise they [...]had another understanding compared to the data engineer and also myself.” - Interviewee 13

Almost half of the interviewees also saw mistrust as one of the causes of tensions in their teams. Two of the interviewees explained that due to cultural or personal differences, team members can have different views on the intentions of others. This can affect the working relationship since it requires collaboration and teamwork while working in diverse teams and judging others intentions wrongly can lead to mistrust in the team giving rise to tensions and conflicts. One of the interviewees said

“[...] but I think they mistrusted the other person's intent in giving them either all the information they needed to be successful [...] “are you giving me all the information I need in order to complete this? Yes or no?” I felt like they didn't really trust each other when it came to that [...]” – Interviewee 6

Another instance which one of the interviewees highlighted was related to trust issues in the team where a team member surpassed hierarchy in the team, bypassing the regular communication channel because of lack of trust.

“So this eventually turned into a kind of mistrust issue and he started directly approaching people above me. So he was kind of passing the hierarchy, which of course caused a problem because then why my bosses were asking me why is this person not going to and coming to me?”

– Interviewee 10

Misunderstandings discussed in the previous section were also connected to mistrust in some cases as highlighted by one of the interviewees. If members in a team trust each other then they can openly ask questions in team discussions without the fear of being judged. But if members in a diverse team do not trust each other based on either cultural or functional backgrounds, they will be hesitant to ask questions in team discussions resulting in a different understanding of tasks.

“Yeah, I think [...] you need to have the trust with your teammates to raise that question and ask, OK, I didn't get it [...] and usually or always that's going to be cost some in time and usually also in the end product because you you're not going to get what you were aiming for. So, I think having a high trust in the teams speeds it up and gives better results and I think also then building that trust is [...] also a bit harder when it comes to different languages and different cultures and so on.” – Interviewee 5

A difference in perception rising from individual experiences either cultural or functional background also affected the level of trust among team members. Upon asking about the role of mistrust in tensions or conflicts in diverse teams, one of the interviewees pointed out that perception about self and others driven by their cultural or functional background can also lead to mistrust.

“[...] I think there is a problem that we sometimes as the Nordic people feel superior because we think a little bit that we are more educated or better, you know more diverse or etcetera than some other regions in the world.” - Interviewee 8

More than half of the interviewees stated that conflicts were not related to mistrust in the team, where many didn't give a clear reason. One interviewee stated that it would rather be phrased as ignorance of culture and a lack of awareness, another stated that it was not due to their background, either functional or cultural.

4.1.6. Other Identified Causes

In the previous section, we have presented all the data collected through interviews related to common causes of conflicts identified through the previous research by asking specific questions

to our interviewees. The open-ended questions asked to interviewees highlighted other causes and types of conflicts even though they were not repeated by multiple interviewees.

Although these causes are not repeated by multiple interviewees, two of them have been chosen to be presented in this section as they offer interesting insights about team dynamics. These causes are also mentioned in previous research and will be further discussed in the next chapter.

Two interviewees mentioned that decision-making has been the cause of conflict in teams specifically due to the cultural background where different countries have different ways of taking decisions which can be annoying for others causing tensions in the team.

“Another factor is that I have for example, experiences that people coming from different countries and nations have different take on decisiveness [...] for example people who come from certain nationalities want to find the best possible solution. And on the other hand, for example someone like myself, I get very irritated with this behaviour, I want quick decisions because I have a different belief. I believe that you can never come to the best decision.” - Interviewee 9

Interviewee 5 also highlighted people’s difficulty in taking decisions:

“People have a harder time making the right decisions [...] and then you kind of fall back to where you come from. What you have learned from your education and what you have learned from behind, and then that's where usually the stress and the clashes happen and when the stress is high” - Interviewee 5

In response to the open-ended questions about the role of cultural diversity in challenges among teams, six interviewees mentioned that they have experienced a cultural influence on team members’ attitude towards authority and responsibility. According to interviewees, the idea of authority and responsibility is different in different cultures. Hence this perception or expectations of how the hierarchy works can cause challenges when people from different cultural backgrounds work together. Four interviewees gave examples of seven different countries to explain how people from certain cultural backgrounds expect authority and responsibility to be distributed in a team ranging from structured hierarchy, strong leadership and mutual consensus to top-driven approach. These interviewees further expressed that this perceptual difference about authority and responsibilities can cause conflicts in a team. One of the interviewees gave an example of a

struggling team member who wanted more authority and power based on the perception of the role influenced by cultural background.

“[...] another factor is that for the idea of authority, for example, [...] authority and responsibility. So the interpretation is very different as well, based on where you come from.” -

Interviewee 9

Talking about different team structure perceptions and expectations across different countries, one interviewee mentioned:

“Well, we noticed that in Turkey, people tend to be a bit more hierarchical [...] I don't know if that's the correct term in English, so, in the Netherlands we used to work as like team, so there is not like a leader[...].” - Interviewee 11

Interviewee 5 explained how other countries have different expectations while working in teams as compared to Sweden:

“So I think Sweden, at least coming from that background is very [...] on one side or making sure that its consensus, everybody should be involved [...] we have Russians, Ukraine, Canada that comes from company that it's much more top driven.” - Interviewee 5

Based on the data presented above, we have identified decision making and attitude towards authority and responsibility to be two other causes of conflicts or tensions. These causes were not part of the hypotheses and they are the result of inductive analysis of research data.

4.2. Chapter Summary

This chapter started by presenting an overview of the collected empirical data after analysis in table 4.1. Afterwards, data about all the causes of conflicts is presented with relevant quotes from the interviewees. Firstly, common types of tension and conflicts identified as language barrier and communication style due to communication, followed by nationality and functional background

conflicts arisen due to status and stereotyping. Thirdly, connection with team, priorities within team, negative perception of nationality and communication between members have been most common types of conflicts identified through the data that all point towards one cause i.e. teamwork and cooperation. Subsequently, non-compatible methods of work among team members and lack of shared understanding of methods constituted the most frequent causes of tensions and conflicts pertaining to working methods. Conflicts due to misunderstandings and mistrust have been most repetitively mentioned by almost all the interviewees. The conflicts appeared in the form of clarity in expectations among team members, misunderstandings in expressions and language, different functional background, judging intentions wrongly, lack of trust due to nationality and lack of trust due to functional background. Finally, the chapter discussed some other causes of conflicts that were not seen as common causes in the previous literature but the analysis showed the importance of these causes. Cultural influence of decision making and attitude towards authority and responsibility has been seen as the most common type of conflict due to difference in decision making styles and different perception and attitude towards authority and responsibility of team members in a diverse team.

5. Discussion

In this chapter, the findings from the empirical data collection will be discussed using the same context i.e., discussing each common cause of conflict identified through the theoretical framework. The findings will also be compared and discussed in regards to the previously conducted research from the literature framework. The discussions are primarily focused on similarities, differences and whether they are in line with previous research or not.

The chapter follows the same sequence as the literature framework in the following order of communication, status, teamwork and cooperation, working methods and misunderstandings, followed by a discussion of other identified causes of conflicts and tensions as presented in section 4.1.6.

5.1. Communication

Hypothesis 1: Diversity in terms of nationality or functional background can cause communication challenges in technical teams.

Communication has been one of the strongest and most relevant causes of conflicts or tensions in these diverse technical teams. As presented in Table 4.1 almost all the interviewees highlighted communication to be the cause of conflicts and tensions in their teams ranging from mild conflicts to severe conflicts. This supports hypothesis 1.

As mentioned by Scarlat, Prodan and Zarzu (2014), language is the most critical part of communication especially in multicultural diverse teams working in IT which have been a core part of this study. Almost all the interviewees mentioned language as the critical part of communication in diverse teams which can be a frequent cause of conflicts and tensions ranging from minor tensions to severe conflicts which confirms findings of previous researchers like Pastel and Zhang (2015) and Matveev and Milter (2004) who also concluded that effective communication and coordination are most common challenges in interdisciplinary and multicultural teams. More than half of interviewees mentioned that language and terminologies

used during meetings and discussion have caused limitations because not everyone in the team understands technical terms and keywords or not everyone is fluent in the language being spoken for discussion. These findings from the data collected in this research are in line with previous research where Scarlat, Zarzu & Prodan (2014) discussed that language is a critical part of communication in projects where there is more technical knowledge and discussions involved. Data collected through the interviewees also supports Nancarrow et al. (2013) findings that general communication problems are one of the prominent challenges in teams with diverse functional backgrounds. Three of the interviewees mentioned that they had a lot of conflicts because their colleagues with non-technical background did not understand the technical language, keywords and limitations of tasks under discussion.

The data collected through the interviewees suggest that communication has been at the centre of conflicts and tensions even in the cases where other causes are at forefront. For example, two interviewees mentioned that miscommunication among team members caused misunderstandings which in turn caused conflicts. Similarly four more interviewees blamed communication to be the root cause behind mistrust and cooperation which caused tensions in their teams. This data is in line with findings of D'Iribarne et al. (2020) who also mentioned that too little communication has been the cause of misunderstandings in multicultural teams. But it is important to mention here that in contrast to finding of D'Iribarne et., al (2020), it is evident from the data collected through interviews that miscommunication is not only the cause of conflicts or tensions in teams with diverse multicultural background but also in technical teams with diverse functional background. Data shows multiple causes of conflicts in these teams are intertwined with each other and one factor can give rise to another. For example, one interview mentioned that there had been many misunderstandings due to poor communication. Another interviewee shared that people might lose trust in each other due to misunderstandings. Analysis of the data shows link between different causes of conflicts or tensions which can be shown with a figure as follows:

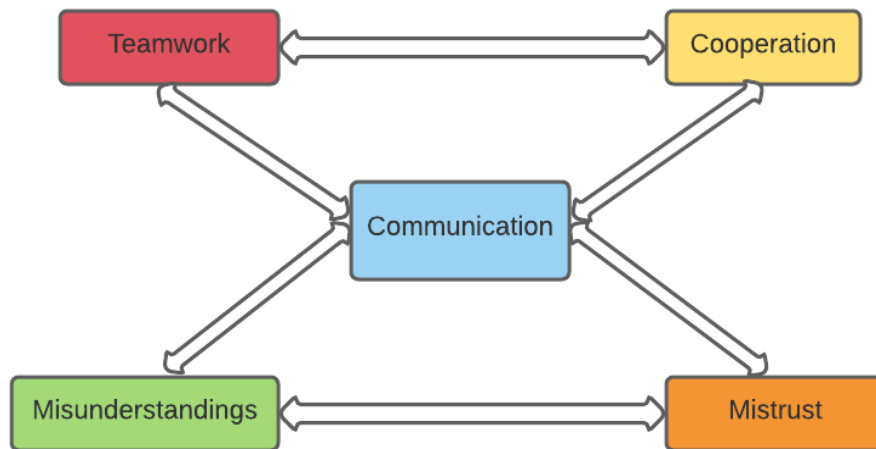


Figure 5.1: Link between causes of conflicts

As depicted above in figure 5.1, it is important to show the link between different factors as mentioned by the interviewee. This analysis will help managers to understand the importance of each factor and stay aware of the link between different causes to prevent teams from falling into the trap of conflict spiral where one cause of conflict gives birth to another conflict. Using this analysis, this study presents suggestions for managers in section 5.8 to help them predict and tackle conflicts effectively.

Empirical data collected through this research also offers interesting insights about the communication challenges associated with software engineers by Pastel and Zhang, (2015). As most of the interviewees in this study belonged to IT teams, four of the interviewees who were working in IT teams including software engineers mentioned that they observed that few people in their teams were reluctant to attend meetings related to working method, skipped parts of the process and faced challenges due to miscommunication in their teams which supports the notion that communication is difficult with software engineers as explained by Pastel and Zhang (2015).

Findings from section 4.1.1 also indicate that cultural norms shaped team members' perceptions and interpretations of different situations in different contexts e.g. how people of a specific country are straightforward in their communication which can be offensive for others who are from another culture. Similarly, simple things can be misinterpreted based on intentions influenced by mode of

communication and cultural background. All this data supports the opinion discussed by Lewis (2005) and Reynolds, Subašić and Tindall (2015) that people's behaviour and reactions can be predicted by focusing on their cultural roots, and their behaviour are shaped by cultural norms.

5.2. Status

Hypothesis 2: *Stereotyping, status differences and social categorization due to functional background or nationality can cause challenges in technical teams.*

Almost half of the interviewees stated that tensions or conflicts had been related to status. This result supports the second hypothesis from this study and is in line with previous research in relation to that status can cause challenges in teams. The types of conflicts were numerous and were in line with previous research. Several interviewees stated that the conflicts were due to nationality, and three examples had a common theme whereby social categorization of other members had been related to the conflict. This finding supports what Yong, Sauer and Mannix (2014) argue for, as the social categorisation led to a form of polarization between members of the team.

Other interviewees described how there had been conflicts due to the functional background, where certain roles in the teams were perceived as adding different amounts of value, and how members neglect to involve other members due to their functional background. This finding supports what Toegel and Barsoux (2016) argue for that members in teams make judgements and put premiums on functional backgrounds. The data from the study are further in line with what Jackson (1996) and Zhang and Pastel (2015) claimed, that the members with a perceived lower status do not get as involved thus their individual potential value may not get utilized. Similarly, two interviewees showcased how stereotyping also had created conflicts, supporting what Jackson (1996) stated regarding the lower status of members in the team. This finding has important implications in several ways. Firstly, conflicts can in fact arise due to status in technical teams. Secondly, managers therefore have an important task in ensuring that each member understands

the unique value added by other members in the team to avoid these status differences and conflicts. Thirdly, as pointed out by Basirati et al. (2020) the complexity of technical projects is increasing and more heterogeneous teams are expected to be formed, highlighting the need for managers to emphasize the value added by each member in the team. The collected data also supports the general remark from Edmondson and Harvey (2018) that the functional backgrounds produce status and conflicting states.

5.3. Teamwork and Cooperation

Hypothesis 3: *Diversity in terms of nationality or functional background can cause challenges in teamwork and cooperation in technical teams.*

More than half of the interviewees stated that differing views on teamwork and cooperation had been related to conflict or tensions in their teams. This result supports the third hypothesis from this study and is in line with previous research in regards to that teamwork and cooperation can cause challenges in teams. However, the different types of conflicts were varying and not in line with previous studies. Matveev and Miller (2004) and d'Iribarne et al. (2020) saw conflicts arise due to the fact that different nationalities had differing views of cooperation. One interviewee said that conflict arose even before any cooperation was possible, due to a reluctance from members in certain teams to cooperate with members from other countries as they had a negative perception of them. This was not the reason for the failed cooperation in the study by d'Iribarne et al. (2020) and Matveev and Milter (2004). Instead, the reasons for conflict in this study happened before cooperation occurred, and due to functional background in regards to the amount of help you provide to team members.

Furthermore, interference had previously been a recurring and key dimension of interpersonal conflict mentioned by Laroche (2003) and Barki (2001) which this research gave no support to. This empirical data instead points to that the lack of interference and involvement within the team is what causes conflict. Pastel and Zhang (2015) had previously highlighted how different functional backgrounds have different priorities, which only one of the interviewees also

mentioned as a reason for conflict where the software engineer prioritized visualising and the marketer a bigger display. Overall the conflicts in teamwork and cooperation were broad, and the reasons for conflicts differed greatly. Therefore, it is hard to pinpoint a specific reason in teamwork and cooperation for conflict. This finding from this study does however highlight the complexity for managers to manage the varying reasons for conflicts in teamwork and cooperation. The finding has implications for managers in a way that they need to actively engage and prepare for a broad range of conflicts.

5.4. Working methods

Hypothesis 4: *Differences in working methods or working process or tools used can cause challenges in technical teams.*

Almost all interviewees stated that working methods had been related to conflict or tensions. This result supports the fourth hypothesis from this study and is in line with previous research in regards to that working methods can create challenges in teams. The types of conflicts were numerous and were mostly in line with previous research. The data from the interviews showed that working with an “agile” or “waterfall” method has created conflicts, which is in line with what Basirati et al. (2020) highlights about having different work approaches in technical teams. Moreover, the collected data also highlight how there needs to be a mutual understanding between the members for the value creation of each step involved in a method, which is in line with what Scarlat, Zarzu and Prodan (2014) emphasize. The findings implicate that there also needs to be a common understanding in the team of the working method used, as the different functional backgrounds each could bring different working methods that are not compatible with each other.

The data collected from this study also shows that conflict arose due to a favouring of conventional methods. This partly supports what Toegel and Barsoux (2016) describe in how the work process differs depending on the functional backgrounds, hence it could be important to discuss the value of each method, regardless if the method is conventional or unconventional. Another interviewee mentioned an aspect where there was uncertainty in the mandate from the leader. This finding was

not in line with previous research, but is an interesting insight in regards to the mutual understanding of leadership in the team. Laroche (2003) and Toegel and Barsoux (2016) stated that teams can get polarized and experience tension due to members being more or less analytical in their approach. The data collected from this study is not in line with this as there were no frequent mentions in the conducted interviews of this being related to conflict. A potential reason for that could be that the majority of the studied teams followed a common method such as “agile” or “waterfall”, eliminating the possibility for individual disagreements due to being less or more analytical. The favour for a conventional or unconventional approach could potentially be tied to the previous research by Laroche (2003) and Toegel and Barsoux (2016), however, the data collected by the interviewees did not allow this opportunity.

5.5. Misunderstandings and Mistrust

Hypothesis 5: *Diversity in terms of nationality or functional background can cause misunderstandings and mistrust due to differences in behavioural norms and perceptions about team members in technical teams.*

As discussed in the data analysis section, a majority of the interviewees explained misunderstandings as one of the major causes of conflicts or tensions. This result supports the fifth hypothesis from this study and is in line with previous research in regards to that misunderstandings can create challenges in teams. The types of conflicts were varying and were mostly in line with previous research. In contrast to previous research where most researchers linked miscommunication as the cause of misunderstanding and stated cultural diversity to be the main reason behind misunderstandings, most of the interviewees also linked misunderstanding to communication i.e. miscommunication can lead to misunderstandings. But uncertainties, language barrier, technological limitations and use of technical language were the prominent reasons of misunderstandings due to functional background diversity rather than mere cultural diversity as highlighted by several interviewees. Most of the interviewees stated that even though minor conflicts or tensions due to misunderstandings had been a cause of frustration for the team, they

did not affect work or team performance and usually got cleared up within a couple of days or weeks.

As discussed by Toegel and Barsoux (2016), members of a diverse team are unconsciously acting in accordance with their culture which affects team dynamics in different ways and can have negative consequences. Findings of section 4.1.5 also confirmed that cultural background has a significant role in creating misunderstandings when people unconsciously act in line with their cultural working style, overestimate themselves over others and interpret situations according to their norms confirming the relevance of cultural background diversity discussed by Toegel and Barsoux (2016).

As discussed in section 4.1.1, most of the interviewees expressed that misunderstandings were related to miscommunication caused by language barrier, word choice and different terminologies used by team members and uncertainties caused by lack of clarity of tasks which were all related to the functional background dimension of diversity. The empirical data also suggests that word choice combined with speed of speaking can be interpreted as offensive causing a lot of misunderstandings which supports the findings of Toegel and Barsoux (2016) that word choice is one of the many dimensions of communication that has the risk of creating numerous misunderstandings.

Toegel and Barsoux (2016) and Pant (2016) also pointed out that members in diverse teams have different attitudes towards deadlines. Similarly, Eboh et al. (2018) also attributed cultural diversity to be the cause of miscommunication leading to misunderstanding in terms of task description and deadlines. Interviewees also confirmed the findings of Toegel and Barsoux (2016) and Eboh et al. (2018) by stating cultural background diversity and miscommunication to be responsible for misunderstandings regarding objectives and deadlines where two interviewees expressed importance of setting the right expectation and one of them explained how based on personal experience they had to repeat information about deadlines multiple times to a team member from a particular country to ensure clarity in order to avoid damage to the team and business.

Data analysis in the previous chapter also confirmed that mistrust has been a cause of conflicts or tensions in their experience of working in a diverse technical team. Hence, the data collected through interviews presented in the previous section also supports hypothesis 5. Two interviewees expressed that cultural diversity plays a critical role in building trust and it is harder to build trust in a team due to different cultures and different languages. This supports the findings of D'Iribarne et al. (2020) and Yong, Sauer and Mannix (2014) that cultural diversity affects interpretation of cooperation among team members and it can lead to grouping which causes mistrust.

One of the interviewees highlighted that conflicts because of mistrust can cost not only time but also the quality of the end product in a way that it is not exactly as it should have been. While most of the other interviewees did not see the conflicts because of mistrust to be severe enough that they caused major dysfunctions in the team. This data is in line with observations made by d'Iribarne et al. (2020) where they noted that mistrust due to intercultural misunderstandings never lead to breakdown of work operations.

5.6. Discussion of other themes

As discussed in the previous chapter researchers have also identified other causes that had an impact in causing tensions and conflicts in technical teams and they are worth mentioning.

Decision making is one of the causes of conflicts discussed by two interviewees which affected the team's working method and work environment. Both interviewees highlighted that decisions are affected by cultural background and they can fall back on the person making the decisions. Hence, decision making can be improved by diverse teams as mentioned by Eisenhardt et al. (1997) and Shen et al. (2009), but it can also create tension in diverse technical teams which can cause troubles if not managed properly.

Meyer (2017) stated that from a leadership perspective, attitude towards authority and decision making is the most important way by which cultures differ from each other. He further highlighted how hierarchy and attitude towards authority are a part of the inherent culture and how they can

create misunderstandings due to differences in leadership style in different cultures. As discussed in section 4.1.6, interviewees expressed that based on culture, people have various preferences for hierarchy and different interpretation of authorities and power associated with roles in the team. These observations are in line with the observations made by Meyer (2017) where he mentioned that Americans consider Japanese as hierarchical and Japanese find Americans confusing. Similarly, Brett, Behfar and Kern (2006) also mentioned that multicultural teams can have inherent challenges because people from different cultures have different perceptions about treating others based on their role and status in the organization. Silberzahn and Chen (2012) also mentioned that status in a multicultural team is associated with power and authority held by the person. Due to this difference in understanding of authority associated with roles, there are high risks of conflicts especially when boundaries of responsibilities are vague. It can also give rise to misunderstandings, as expressed by one of the interviewees where they mentioned that lack of clarity in task descriptions can cause frustration and conflicts when leaders come with a weak message. Moreover, a lack of clarity in responsibilities can also create a lot of confusion and different expectations, leading to conflicts. Hence, the responsibility of leaders and managers is more important in this situation when there are misunderstandings due to different understanding of responsibilities and task description.

5.7. Conflict Severity

In the previous sections numerous examples of conflicts were presented ranging from minor conflicts to severe conflicts. Most of the examples of conflicts presented in this study were regarded as minor conflicts by the interviewees. Most of the interviewees expressed that even though most of the conflicts were minor in nature and get solved quickly in a couple of days or weeks, they have the risk of becoming severe. The severity could either have a negative impact on business or it can cause dysfunctionalities in the teams. Even though the focus of this research was not to gauge the severity of conflicts and tensions experienced by diverse teams, the data collected in this research contains sufficient information to present a brief analysis of the severity of conflicts and tensions experienced by the interviewees. The following table 5.1 only depicts data for the interviewees who mentioned the severity of conflicts. As severity of conflicts is another aspect which needs to be studied separately with more depth, this study only presents partial information

without in-depth analysis on the severity experienced by the interviewees. In the Table 5.1 below, Column one represents causes of conflicts, only the causes with considerable response on severity from interviewees have been chosen to be listed here. Column two shows the number of interviewees who mentioned the cause of conflict listed in Column one to be severe and resulted in either affecting team performance or causing financial loss to the business. Column three shows the number of interviewees who mentioned the cause of conflict in Column one to be either minor or mild conflict that gets solved on its own over the time within days or weeks.

Table 5.1: Severity of conflicts

Cause of Conflicts	Severe Conflict	Minor or Mild Conflict
<i>Misunderstandings and mistrust</i>	1	3
<i>Communication</i>	1	1
<i>Working method</i>	1	3
<i>Teamwork and Cooperation</i>	0	1

As depicted above in Table 5.1, the data presents very few responses on the nature of severity of conflicts because this research was not aimed at determining the severity of conflicts. Furthermore, it should be noted that in Table 5.1, for example a total of four participants mentioned the severity of conflicts due to misunderstanding and mistrust, it does not mean that the remaining nine participants believe there was no conflict at all in their teams due to misunderstandings and mistrust. Rather these remaining nine participants did not express any information about the severity of conflicts.

It is imperative for team leaders and managers to manage these conflicts effectively whether minor or severe to avoid any dysfunctionalities in teams or financial losses to business. All the interviewees who had the experience of managing or leading diverse teams were asked questions to explore their strategies for resolving conflicts that arose due to cultural or functional background diversity in technical teams. In the following section, a brief analysis will be presented on how the

above mentioned conflicts and tensions affected teams' performances. Further, based on interviewees' personal experiences and findings of previous researchers, suggestions for managers and leaders on effective management of conflicts and tensions due to diversity will be presented.

5.7.1. Most common consequence of tensions or conflicts

In the previous sections, all types of conflicts and tensions along with their causes were discussed. Upon further analysis of data, researchers were able to identify the most common consequence of these challenges in diverse technical teams which can affect team performance.

The finding of this study was in line with the empirical study by Basirati et al. (2020) which concluded that both human-rooted and non-human rooted conflict affect projects negatively. As almost half of the interviewees expressed that the conflicts and tensions mentioned by them affected the team performance in such a way that it always cost the team to take more time to finish the task or project. Six interviewees mentioned that the challenges mentioned by them delayed the project or product in their respective teams. One interviewee said that it was because of more meetings and more discussions. Another interviewee expressed that more time was spent to resolve the conflict and more effort was spent to address the issues which lead to more time.

Hence, on the basis of empirical data collected during the research, a finding in addition to severe conflicts which have the serious potential to disrupt team performance, minor tensions and conflicts in diverse technical teams also have the risk of delaying projects or products which can damage the team and lead to monetary loss of business.

5.8. Suggestions to prevent tension and conflict escalation

Conflicts and tensions are part of every team, let alone diverse teams. Many researchers have suggested effective ways of managing a diverse team to benefit from constructive conflict and avoid destructive conflict. Cox and Lancefield (2021) suggested a roadmap consisting of five strategies for a more systematic and coherent approach towards diversity and inclusion. Syed and Tariq (2017) and Scott and Byrd (2012) also described several leadership traits and behaviours including effective leadership training, diversity and inclusion efforts, cultural intelligence and

organizational contexts that could be used with a positive belief in diversity to gain competitive advantage and drive innovation. Finkelstein (2017) identified four practices for managers managing diversity in order to achieve innovation, high-performance and high growth. These four practices include hiring diverse talent, defining core vision but staying open for innovation, providing opportunities for employees and fostering competition and collaboration (Finkelstein, 2017).

Efforts mentioned by previous researchers can minimize destructive conflicts and tensions but they cannot be completely avoided. Hence, this study also provides guidelines and suggestions to effectively manage conflicts and tensions in diverse technical teams. Based on the data, most of the minor tensions and conflicts discussed in this study have the risk of becoming severe conflict if not managed properly. This section explores different strategies explained by interviewees to manage tensions and conflicts in their teams followed by a comparison with diversity management recommendations from previous research. Most of the interviewees stressed the need of acknowledging and addressing the conflicts as early as possible in order to handle them effectively before they get worse. This highlights the findings of Toegel and Barsoux (2016) that waiting for more evidence to address conflicts builds frustration which makes it hard to restore the trust in these teams.

The following section presents suggestions and strategies based on data collected from interviewees. All the interviewees who worked to lead or manage a diverse technical team shared insights about handling conflicts in their teams based on their personal experiences.

Five interviewees of this research worked in a role where they either lead or managed a diverse technical team. One interviewee discussed the approach that they used to handle conflicts in their diverse team by not linking the conflict to diversity and treating the conflict stand alone. Then listening to the people involved in the conflict and coaching them. Another interviewee shared that in order to manage conflict a 360° feedback or group discussions were used based on the situation and nature of conflict to resolve the issue at hand. One interviewee explained that bringing conflicts to discussion early on is very important while working in such diverse teams by putting the right people in the same room to initiate the discussion about the issue. One of the interviewees

explained a very systematic approach of solving conflicts based on the interviewee's experience of working in diverse teams by proposing third party conversation. First, the manager tells the person who is the most angry to explain their story and the second person summarises and repeats what the first person said. Then the second person explains their case and the first person summarises and repeats what the second person said. This triggers a critical psychological effect of walking into another person's shoes to identify the needs of concerned team members.

One of the objectives of this research is to help managers and organizations to manage diversity effectively. Conflicts and tensions are part of every team but with the help of strategies presented in this study, managers can minimize the risk of destructive conflicts. One of the important aspects of this study is also to present effective ways that can help managers to prevent escalation of tensions and conflicts becoming severe to a level where teams can become dysfunctional. Further, this paper presents suggestions and recommendations to manage challenges originating in diverse technical teams specifically due to these causes listed in Table 4.1.

5.8.1. Flexible management style

After going through all the different examples of conflicts and tensions from the empirical data in this study, one clear observation is that the response of managers to conflicts varied in nature depending upon the situation. Hence, there is no golden rule that fits all. Based on this observation, a manager needs to have a flexible management style and adjust strategy to address these conflicts depending upon the situation. As teams are becoming more diverse around the globe, managers need to have a fluid management style and adapt according to the situation, coming out of their comfort zone in a culturally diverse team (Meyer, 2014). As proposed by Molinsky and Gundling (2016), depending upon the situation, leaders have to act as cultural bridges between conflicting parties.

5.8.2. Understanding behaviours and Cultural Intelligence

The analysis of conflict resolution strategies shared by the interviewees revealed that it is important for managers to connect with team members, understand and acknowledge the cultural differences in the team. As suggested by Molinsky and Gundling (2016) it is important for leaders to build trust among team members by understanding behaviours and patterns of team members and

understanding the communication styles through one to one conversations and frank group discussions with team members. They further argue that a leader should also be aware of language differences and be able to understand different cultural perspectives in order to predict and manage possible misconceptions and miscommunications effectively. Cultural diversity has a potential for causing confusion and inefficiency which can be avoided if the leader carefully understands and predicts how team members will behave in a certain situation because of their cultural differences (Meyer, 2014).

Cultural intelligence is becoming increasingly important in the world due to its importance in diverse teams. Multicultural teams' success relies on the level of cultural intelligence not only possessed by the team members but also by the manager or leader of the team (Earley & Mosakowski, 2004). According to Earley and Mosakowski (2004), leaders must have the level of awareness and cultural understanding in order to adapt their communication style, language and non-verbal communication among the team to convert differences into team's assets.

Scott and Byrd (2012) explained that intercultural competence and cultural intelligence facilitate cooperation and collaboration in employees within organizations with diverse workforce. Lee and Liao (2015) highlight the importance of cultural intelligence by stating that cultural intelligence in multicultural managers offers invaluable attributes as they are aware of the beneficial role of culture in a workplace. Leaders are more advised to enhance their intercultural competence to manage diversity and deal with complexity and ambiguity (Scott & Byrd, 2012). Hence, developing cultural awareness and understanding, cultural intelligence and intercultural competence in managers, gives rise to the possibility to prevent destructive conflicts in diverse teams.

5.8.3. Clear direction, authority and responsibilities

Most of the interviewees highlighted challenges related to the idea of responsibility and overlapping task domains. Conflicts due to different attitudes towards authority and responsibility influenced by different cultures are explained in section 5.6 and as expressed by one of the interviewees it can create a lot of frustrations and misunderstandings when leaders come with weak messages and lack of clear direction. Every culture has its own perception and idea of

responsibilities associated with a role in a team, the data collected in this research only belonged to interviewees (Managers) from three countries i.e. Sweden, Netherlands and Switzerland. Based on the empirical data, interviewees from all three countries highlighted this issue that vagueness of tasks and responsibilities can create a lot of confusion and misunderstanding that can lead to conflicts. Hence, a clear workgroup structure and defined domains of responsibilities can be important to clear any ambiguities associated with roles and responsibilities. Bachmann (2006) advocated that responsibilities and authority of group members need to be structured in a clear manner so that there are no ambiguities regarding interdependent tasks. It is important for multicultural teams to have a clear and compelling direction in addition to other conditions required to set-up successful multicultural teams (Molinsky & Gundling, 2016).

5.8.4. Prompt Conflict Handling

Having a good strategy is not enough to address conflicts due to diversity. Addressing the issue early on and intervention by managers also plays a critical role in handling conflicts due to diversity. One interviewee expressed that most of the time team members and colleagues were dealing with conflicts themselves and managers did not take the responsibility to address the conflicts, but the team expected the manager to intervene and handle the issue. Another interview mentioned bringing up conflicts in a team for discussion as early as possible to avoid the conflicts escalating. Toegel and Barsoux (2016) found that a proactive approach to solving conflicts was much more effective than waiting for the evidence which leads to a buildup of frustration. Molinsky and Gundling (2016) also iterated to quickly address any tensions in a cross-cultural team to prevent a minor conflict becoming a severe conflict.

5.8.5. Building Trust and shared understanding

As pointed out by many interviewees, miscommunication in teams can lead to misunderstandings and mistrust among team members, which in turn causes conflicts in the teams. As explained earlier in section 5.1, communication has been central to linking many other causes, especially misunderstanding and mistrust. Data collected in this research shows that mistrust, misunderstandings and miscommunication are all intertwined with each other. This is in line with what Samuel (2020) argued for; a lack of mutual understanding of agreements and clear

expectations is the first step towards a break of trust which can lead to poor and ineffective communication. Similarly, Lyman (2003) articulated that trust is a critical element to enable effective communication, maximize collaboration across hierarchies and departments and the ability to resolve difficult situations in teams. Therefore, building trust is one of the important steps in a diverse team to improve communication so that team members can ask questions and communicate openly and freely. Trust is one of the most vital forms of capital in teams which can either be developed or restored through three key drivers of a trust triangle i.e. authenticity, logic and empathy (Frei & Morriss, 2020). One of the interviewees also mentioned that team members need to have trust in the team to ask questions if they do not understand something, to reduce the risk of miscommunication. In teams with functionally diverse backgrounds, trust is essential to create an environment where everyone can ask questions to ensure shared understanding of tasks and share knowledge. According to Frei and Morriss (2020), diverse teams by default have less shared knowledge between team members and they can underperform in comparison to homogenous teams when it comes to decision making. On the other hand, if the leader can create conditions for team members to trust each other which allows them to share their unique knowledge, it can result in giving diverse teams the upper hand. Su (2019) encourages leaders and managers to foster an environment that facilitates open communication. Su (2019) recommends three ways for leaders to build trust in the team i.e. hold more one-on-one meetings with team members, be fair when giving feedback and approach members who are struggling silently.

5.9. Chapter Summary

This chapter discussed empirical data collected through interviews in the light of literature presented in theoretical framework in chapter 2. Overall, the chapter is divided into eight sections. The first five sections discussed types and causes of conflicts with regards to the theoretical framework. As discussed in section 5.1 to 5.5, data provided by interviewees confirmed all the hypotheses formulated for this study. It also showed how communication was at the centre of all other causes, highlighting its significance for managers and organizations when managing diverse technical teams. Subsequently, two other causes of conflicts and tensions identified through the data analysis were discussed in relation to their significance with diversity management. Further, it was mentioned that most of the interviewees expressed no severe conflicts due to diversity,

instead they mostly encountered minor conflicts that were solved quickly. Additionally, this section also included a discussion on consequences of these minor conflicts on team performance with most of the interviewees stating that these conflicts resulted in delaying the tasks, projects or product launch. Finally, this chapter concluded with suggestions or recommendations for managers and organizations to handle conflicts due to diversity in technical teams and prevent minor conflicts spiraling out of control into more severe conflicts. These recommendations were presented in the context of strategies shared by interviewees to handle conflicts based on their experience and strategies shared by previous researchers.

6. Conclusion

This chapter summarises findings of this research in order to answer the research questions. It also presents how and to what extent research aims and objectives are achieved. It further discusses practical implications of this research by highlighting how this study adds value to existing literature and to what extent managers and organizations can apply the findings of this research in the workplace. Finally, potential areas of this study that can be further explored and studied are identified for future researchers.

6.1. Research Aims & Objectives

The purpose of this study was to investigate if cultural or functional background diversity in technical teams causes tensions that can lead to conflict. The study identified underlying causes behind these tensions that can create conflicts and identified the most frequent causes and types of conflict. The following section provides the answers to the research questions:

1. *What are the most common types of tensions and conflicts that occur in technical teams due to diversity in functional or cultural background?*

As presented in Table 4.1, data collected during this research points out that lack of clarity in expectations, misunderstandings in expressions and language, misunderstandings due to functional background, wrongly judged intentions, and lack of trust due to nationality and functional background are the most common types of tensions or conflicts, all of which point out to a single cause i.e. Misunderstandings. Furthermore, the empirical data also suggests that language barriers, communication style and lack of understanding of technical language are the most common types of tensions or conflicts, all related to communication. Lastly, non-compatible working methods among team members and lack of shared and clear understanding of methods are the most common types of tensions or conflicts caused due to working methods.

2. *What are the underlying causes behind tensions and conflicts that occur in technical teams due to diversity in functional or cultural background?*

On the basis of the data collected from this research, the answer to the second research question is that the cultural and functional diversity have created tensions or conflict in the technical teams. As presented in Table 4.1, this study presents several underlying causes behind tensions and conflicts. The most recurring cause behind tensions or conflicts was *misunderstandings*, mentioned by almost all the interviewees. The second most recurring cause in this study was *communication*, which was also mentioned by almost all the interviewees. The third most recurring cause in this study was *working methods*, which was also mentioned by almost all the interviewees.

3. *What are the effective ways of handling tensions and conflicts in functionally and culturally diverse technical teams?*

As outlined in section 5.8, this research offers key recommendations and suggestions to handle conflicts in diverse technical teams by combining strategies shared by participants (working as managers) with findings of previous researchers, scholars and professionals. In a nutshell, this study suggests five key areas for managers to focus on. First, flexible management style is the prerequisite for managers to handle conflicts since every conflict has a different context. Second, it is imperative for managers to develop cultural intelligence in addition to emotional intelligence aiding them to better understand all the team members and to be able to predict their behaviour. Third, managers need to lead with clear direction and authority. Clear distribution of responsibilities also minimizes risk of misunderstandings and miscommunication to prevent destructive conflicts. Fourth, addressing the conflict as early as possible helps to diffuse any conflict that has the potential to disrupt teams. Last but not least, developing shared understanding and building trust among team members can help the manager to not only connect with the team but also minimise risks of severe conflicts due to misunderstandings.

6.2. Practical Implications

This paper outlined common causes and types of conflicts in diverse technical teams along with suggestions and recommendations for managers and organizations. It offers insights for managers to identify and predict possible challenges of managing a diverse technical team. With the help of causes and types of conflicts identified in this paper, managers can get a deeper understanding of possible conflicts and make informed decisions based on the findings of this study. As outlined

earlier, many conflicts in diverse technical teams have the potential to become worse and not only affect team performance but also result in financial loss. Hence, this paper helps managers to prevent letting minor conflicts turn into severe conflicts and offers insights to effectively handle conflicts in diverse technical teams.

Furthermore, in order to better prepare managers and organizations for effective diversity management, this study can help organizations by providing critical information. The common types of conflicts in diverse technical teams highlighted in this paper also give organizations the opportunity to utilize these insights while designing diversity training for managers and employees to create awareness and emphasise the efforts required from both organizations and employees to achieve high efficiency, innovation and financial gains. Finally, by utilising the findings of this study, organizations can step-up their diversity and inclusion efforts by incorporating suggestions and recommendations presented in section 5.8 to better manage diversity productively. Success of companies like Accenture Plc and Sony Corp justify required efforts and significant outcomes for diversity and inclusion when implemented effectively and strategically (Refinitiv, 2020).

6.3. Future Research

Future research could be initiated with the same underlying causes but instead adopt a quantitative method. It would be interesting to see if the causes of these tensions and conflicts are generalizable to a bigger sample. Moreover, this research has focused on conflicts for the whole lifespan of a technical team, it would be interesting to compare this research with a specific stage of a technical team, and see if these challenges would apply or if there are other factors that are more prominent in a certain stage of team development.

Two interviewees mentioned the correlation of decision making with the cultural background dimension of diversity. One of the possible reasons why these causes were not mentioned by many other interviewees could be the total number of interviewees chosen for this study considering the time constraints. Hence, for future researchers, these other causes identified through an abductive approach can also serve as a direction to look into their role in causing conflicts in diverse teams. It is possible that if the same study would have been conducted on a larger scale i.e. more number

of interviewees, then researchers might be able to see more evidence of these causes of conflicts being mentioned by multiple interviewees.

Lastly, as severity of conflicts was not the focus of this study, future researchers can also take this research one step further by using a quantitative approach to study severity of conflicts in diverse technical teams and identify to which extent these underlying causes are involved in constructive or destructive conflicts and quantify how significantly they affect the team performance.

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Appendix A: Details of Interviewees

Interviewee	Role	Country of Origin / Nationality	Country of Work	Functional Background	Total Work Experience (years)	Experience of Working in Diverse Teams (years)
Interviewee 1	Team coach	Swedish	Sweden	Bachelors in Pedagogics	20	15
Interviewee 2	PhD Researcher	Swedish	Sweden	Msc. in Electrical engineering	29	21
Interviewee 3	Software developer	Swedish	Norway	Masters in Corporate Entrepreneurship and Business Design	2	2
Interviewee 4	IT-Consultant	Swedish	Denmark	Masters in Mechanical Engineering	2	2
Interviewee 5	Agile Coach	Swedish	Sweden	Masters in Computer Science	16	7
Interviewee 6	Technical Project Manager	U.S.A	Netherlands	Master of Science in Management	23	10
Interviewee 7	Technical consultant	Greek	Malta	Masters in Management	7	6
Interviewee 8	Managing director	Swedish	Sweden	Masters in Industrial Engineering and economics	22	10
Interviewee 9	Senior software developer	Swedish	Sweden	Masters in Computer Science	12	5
Interviewee 10	Software Engineering Manager	Pakistani/ Dutch	Netherlands	Bachelors in Software Engineering	12	6
Interviewee 11	Technical Lead	Dutch	Netherlands	Bachelor in IT	15	2
Interviewee 12	Graph Techs Specialist	French / Swedish	Sweden	Masters in Data Processing	17	9
Interviewee 13	Product Owner	German	Switzerland	Masters in Management	20	15

Appendix B: Interview Questions guideline

Questionnaire

Open-ended questions

1. In general do you feel that diversity due to people being from different countries and cultures has posed challenges in your team?
 - a. If yes, can you please elaborate what kind of challenges?
 - b. Did any of the challenges in your team lead to a conflict between members in the team?
 - i. How severe were these conflicts?
 - ii. Can you please give examples of these conflicts?
2. In general do you feel that diversity due to people being from different functional backgrounds (educational background) in the projects has posed challenges in your team?
 - a. If yes, can you please elaborate what kind of challenges?
 - b. Did any of the challenges in your team lead to a conflict between members in the team?
 - i. How severe were these conflicts?
 - ii. Can you please give examples of these conflicts?

Section 2 Questions

3. Have these conflicts been related to misunderstandings?
4. Have these conflicts been related to mistrust among team members?
5. Have these conflicts been related to members stereotyping other members in the team?
6. Have these conflicts been related to communication?
7. Have these conflicts been related to different perceptions of what teamwork is?
8. Have any of these conflicts led to a new conflict between members in the team?
9. Have these conflicts been related to a perceived difference in status of these members in the team?
10. Have these conflicts been related to cooperation?
11. Have these conflicts been related to that members are not used to working with a different methodologies than usual?
12. Do you feel that with a bigger team, members are prone to more conflicts?
13. In your experience of working in diverse teams, have you ever experienced any type of conflict that affected team performance negatively?

Question only for Manager

1. How do you respond to conflicts in your team due to diversity (nationality or functional background)?

Appendix C: Consent Form

Managerial Challenges Due to Diversity in Technical Teams: A qualitative study

Consent form for interviewees

Purpose of the study:

The purpose of this study is to study different factors and find out the most common reasons that cause tensions, conflicts or frictions in technical teams. We want to understand the challenges that multinational/multicultural teams with diverse functional (educational) backgrounds face, especially managerial challenges for managers to handle these teams.

Interviewee Information Required:

- Your identity will be kept anonymous by changing your name and by disguising anything that can identify you.
- The data collected will only be used for the purpose of this study.
- The information required below will only be used for the research purpose.

Name:

Current position/role:

Email address:

Education Level (Bachelor's/Masters):

Bachelor's Education (Field of study):

Masters Education (Field of study):

Nationality:

Current working country:

Total Work Experience (years):

Approximate experience (months/years) of working in at least 60% diverse team (either based on different nationalities/cultures or different educational/functional background):

I give my consent verbally that:

- I voluntarily agree to participate in this research study.
- I am aware that I can at any time choose to withdraw from the study without any reason.
- I am aware that I will not be forced in any part of the interview to answer a question, and I am aware that I at any time can refrain from answering a question asked by the interviewer.
- I have had the purpose of the study explained to me written and I have had the possibility to ask any clarifying questions.
- I agree that my interview can be audio recorded.

- I have worked in or with at least 1 team which is at least 60% diverse either with respect to nationalities/cultural background or functional/educational background
- I understand that my participation will be anonymized in the end-result of the thesis.
- I understand that the researchers will create a transcript of my interview in which all identifying information of your personal identity will be retained for the researchers only.

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